

JACOBS

EPA Region 5 Records Ctr.



311133

TES IV

APPENDIX A
BACKGROUND DOCUMENTS
HANNAH MARINE
LEMONT, ILLONIS



**JACOBS ENGINEERING GROUP INC.
ENVIRONMENTAL SYSTEMS DIVISION**

IN ASSOCIATION WITH:
TETRA TECH
METCALF & EDDY
ICAIR LIFE SYSTEMS
KELLOGG CORPORATION
GEO/RESOURCE CONSULTANTS
BATTELLE PACIFIC NORTHWEST LABORATORIES
DEVELOPMENT PLANNING AND RESEARCH ASSOCIATES

APPENDIX A
BACKGROUND DOCUMENTS
HANNAH MARINE
LEMONT, ILLONIS

APPENDIX A

Bibliography of Background Documents Hannah Marine, Lemont, Illinois

Source: Metropolitan Sanitary District

Document No.	Description
001.a	Notice of Violation - Hexane Discharge (3/14/75)
001	IWC Field Operation - Investigation: Sandblast/Paint (5/9/75)
002-003	IWC Field Operation - Special Investigation Oil Slick (11/5/76)
004	MSD - Private Treatment Plant Inspection: Oil Cleanup (11/8/76)
005	MSD - Private Treatment Plant Inspection: Oil Cleanup (11/9/76)
006	MSD - Private Treatment Plant Inspection: Oil Slick (11/22/76)
007	MSD - Private Treatment Plant Inspection: Oil Slick (1/12/77)
008	MSD - Private Treatment Plant Inspection: Oil Slick (2/4/77)
009	County Clean Streams Committee: Oil Slick (10/27/79)
010-011	MSD - Special Investigation: Oil slick High pH waste in holding pond (10/29/79)
012-016	IWC Field Operation - Special Investigation: Styrene, toluene, xylene, and high pH water in ponds and landfills (11/2/79)
017	MSD eviction notice to Hannah Inland Waterways (11/13/79)
018	MSD Notice of Violation to Hannah Inland Waterways (11/19/79)
019-020	IWC - Special Investigation: Tank Truck Dumping (11/25/79)

021-022 IWC Field Operation - Special Investigation:
Tank Truck Dumping (11/25/79)

023-024 MSD Notice of Termination of Hannah Lease
(11/26/79)

025 MSD - Analysis of Sample (11/27/79)

026-027 MSD - Cover letter and notes
(11/28/79 - 1/11/80)

028-029 MSD - Analysis of Samples (12/17/79)

030 MSD - Cover letter for Analysis (12/18/79)

031 MSD - Notice of Violation to Hannah Marine
Corporation (12/21/79)

032-033 EPA - Potential Hazardous Waste Site:
Identification and Preliminary Report
(1/21/80)

034 Conciliation Agreement between MSD
and Hannah Marine Corp. (1/28/80)

035-036 Analysis of Soil Samples (2/18/80)

037 EPA - Potential Hazardous Waste Site:
Final Strategy Determination (4/28/80)

038 Conciliation Agreement between MSD and Hannah
Marine Corporation (5/21/80)

039-040 IWC Field Operation - Special Investigation:
Sludge Pond (4/29/80)

041 Hannah Marine correspondence with MSD:
Sludge Cleanup (7/31/80)

042 IWC Field Operation - Special Investigation:
Cleanup Operations (8/5/80)

043 CCSC Correspondence with MSD: Channel 7
expose (8/24/80)

044-045 IWC Field Operation - Special Investigation:
Cleanup and current procedures (8/26/80)

046-048 Notes on Cleanup Progress (10/1/80)

049 IWC Field Operation - Special Investigation:
Progress of Cleanup (3/13/81)

053 Inspection of Operations: Wastes generated
 (8/27/81)

054 MSD - Industrial Waste Control Plant Summary
 (8/27/81)

055 MSD - Report of Hazardous Materials: Storage
 of Fuels and Oils (9/1/81)

057 Conciliation Agreement between MSD and Hannah
 Marine Corporation (3/22/82)

058-059 IWC Field Operation - Special Investigation:
 Storage tank and chlorinator (5/25/82)

060 Message to Roy Kaufman regarding storage
 tank (6/18/82)

061-062 EPA - Potential Hazardous Waste:
 Preliminary Assessment (3/29/84)

063 MSD - Notice of Violation: Discharge
 into Canal (3/10/86)

064 Conciliation Agreement between MSD and
 Hannah Marine Corp. (3/24/86)

065 Letter explaining discharge to Canal
 (3/31/86)

066 Conciliation Agreement between MSD and
 Hannah Marine Corp. (4/22/86)

067 MSD - Letter regarding discharge violation
 and sampling (2/23/87)

068 MSD - Notice of Violation: Discharge to
 Canal (3/20/87)

069-070 Interview Notes: John doe, previous
 employee of Hannah Marine Corp. (4/2/87)

071-073 Interview Notes: Al Gidreitas and Rich
 Sustrich, employees of MDS (4/14/87)

NICHOLAS J. MELAS
PRESIDENT

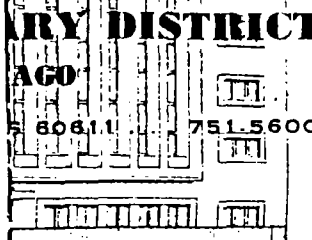
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RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO	HANNAH INLAND WATERWAYS	POSTMARK OR DATE
STREET AND NO.	New Avenue/Lemont, Ill.	
P.O., STATE AND ZIP CODE		
OPTIONAL SERVICES FOR ADDITIONAL FEES		
RETURN RECEIPT SERVICES	1. Shows to whom and date delivered 15¢ With delivery to addressee only 65¢ 2. Shows to whom, date and where delivered .. 35¢ With delivery to addressee only 85¢	
DELIVER TO ADDRESSEE ONLY	50¢	
SPECIAL DELIVERY (extra fee required)		

PS Form 3800 NO INSURANCE COVERAGE PROVIDED— (See other side)
Apr. 1971 NOT FOR INTERNATIONAL MAIL GPO: 1972 O-460-743



OF
OF GREATER CHICAGO
ILINOIS

THE METROPOLITAN SANITARY)
DISTRICT OF GREATER CHICAGO)
vs.)
HANNAH INLAND WATERWAYS)

Complaint No. 75-65
WATERWAY

NOTICE OF VIOLATION

TO: Mr. Donald C. Hannah, Pres.
New Avenue (P.O. Box 189)
Lemont, Ill.

Location:
C.S.S.C. at Allied Oil Dock
3301 California
Chicago, Ill.

Investigation has revealed that you are in violation of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago and the applicable State Statutes pertaining to pollution. Your violation consists of discharging an effluent with excessive concentrations of hexane soluble material (500,000 mg/l)-grab-1/8/75, from Barge #2001 to the Chicago Sanitary and Ship Canal.

You or your authorized representative, are requested to appear at 100 East Erie Street, Room 312, Chicago, Illinois on March 31, 1975 at 2 p.m. to conciliate on the subject matter, and for you to submit at that time, a plan for abatement of such pollution and an outline of the schedule for the installation of permanent facilities.

YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH PENALTY AND LEGAL ACTION AS PROVIDED BY LAW.

Witness March 14, 1975
THE METROPOLITAN SANITARY DISTRICT
OF GREATER CHICAGO

Bart T. Lynam, General Superintendent

By Cecil Lue-Hing
Cecil Lue-Hing, D.Sc., P.E.
Director
Research and Development

Jerome Tobias
Jerome Tobias
Chief Enforcement Officer

001.a

DIRECT PHONE INQUIRIES TO 751-5697

I W C FIELD OPERATION - ~~SECRET~~ INVESTIGATION

Subject of Investigation:

Date of Investigation: May 9, 1975

Hannah Inland Waterways, Inc.
Rt. 83 & Rt. 171
Lemont, Ill.

Originated by:

Main Office ☐
Trt. Plant ☐ Clean Streams ☐
Other ☐ Local Authority ☐

Person

Date

Time

Type of Complaint:

Waterway ☐ Sewer ☐ Other ☐

Surveillance

Supervisor Assigned:

F. Kelly

Water Samplers:

Sample ☐

Photographs ☐

Additional Information Attached ☐

INVESTIGATION:

The subject company was visited while on routine surveillance in the Lemont area. Much equipment used for sandblasting and spray painting operations was observed. Upon talking to a Mr. Lou Gregovich, who said he was the chief storekeeper, it was discovered that it is "normal operation" to sandblast, spray with red lead primer, and spray paint the barges while they are in the Chicago Sanitary & ship Canal. These operations were not being carried out while the writer was present, but all this equipment was ready for immediate use. The compressors for the blasting and spraying operations were running, the primer and paint cans were open and the spraying hoses were in the cans.

One of the barges present in the canal was almost completely painted the "Hannah Blue" color, while one end of the barge had been freshly sandblasted. The black, gritty sand was all over the deck of the barge, and had accumulated to a thickness of about 2" on the bank for the full length of the barge. It's presence in the canal could not be detected because the material sinks immediately, but from the huge amount present on the bank and the employee's statement regarding sandblasting of barges while in the canal, it can be safely deduced that a large amount of the sandblasting material is in the canal.

The writer advised the employees to cease the operations, but from the past history of this company their co-operation cannot be taken for granted. The company will be kept under a more strict surveillance and photos and possibly samples will be taken.

cc: J. Tobias

Approved: N. Venuso

N. Venuso

F. Kelly
F. Kelly

I W C FIELD OPERATION - SPECIAL INVESTIGATION

Subject of Investigation:

Hannah Inland Waterways
Route 171 and 83
Lemont

Date of Investigation:

November 5, 1976

Originated by:

Trt. Plant ☐

Other ☒

Main Office ☐

Clean Streams ☐

Local Authority ☐

Type of Complaint:

Waterway ☒

Sewer ☐

Other ☐

C.S. & S.C.

Supervisor Assigned:

Roy Kaufmann, P.C.O.I

PersonDateTime

James Dencek

11/5/76

1410

Water Samplers:

Sample ☐

Photographs ☒

Additional Information Attached ☒

INVESTIGATION:

HELICOPTER SURVEILLANCE FOLLOW-UP

Light Oil Film From Barges at Subject to

Route 83 Bridge Over C.S. & S.C., South Bank

The writer contacted subject's George Smith, who delegated Ed Gans, Foreman, to accompany the writer to barge location. (Indicated in poor quality Polaroid Photo #6).

The 6 foot (average) rainbow band extending from upstream end of barges to Route 83 bridge was not visible from the ground, possibly because of wind/wave activity.

A diminished blue slick was visible between meeting ends of two barges (Photo #6) along with rainbow slick patches and globules of oil in the canal between the bank and barges being worked on at subject in vicinity of fixed piping along bank, canal water pump, and boiler room.

- Continued -

Subj: Hannah Inland Waterways


Nov. 5, 1976

The discharge from a vacuum pump which uses a small quantity of canal water for seal/cooling purposes was observed to contain blue slick patches as it trickled over the bank into the canal. Mr. Gans had vacuum pump canal water flow stopped (operations completed for the day), placed oil absorbant in trickle discharge and agreed to pickup oil located between barges and bank with absorbant.

Subject pumps canal water into a common manifold for (1) boiler feed, (2) barge wash water, and (3) vacuum pump seal/cool:

1. Canal water is pumped to open, rectangular tank storage (designated Station #11) in boiler house for use in boiler. Water treatment chemicals are injected in feed line from storage tank to boiler. Boiler blow down is returned to canal through floor drain under boiler (designated Station #2).
2. Barge wash water is pumped from canal to wash water storage tankage for heating in preparation for internal barge washing with high pressure nozzels.
3. A minimal flow rate of canal water is used in sealing and cooling components of vacuum pump which is used in spent barge wash water removal system.

Private Treatment Plant surveillance at subject will be expanded to include barge cleaning activity and canal condition between bank and barges.


Roy Kaufmann, P.C.O.I

RK:vb

Approved: _____
Nicholas Venuso, P.C.O.III

cc: J. Tobias

METROPOLITAN SANITARY DISTRICT
Private Treatment Plant Inspection

Name HAWAII INLAND WATERWAYS Date of Inspection 11/8/76
Address RTE 93+171 Plant Operator on Duty _____
Town HEMONT Not Present ☐ SUNDY 30's

PLANT CONDITION:

~~Primary~~ STA#11 CS & SC INTAKE AT OPEN RECTANGULAR
STORAGE TANK BEHIND BOILER. WATER WAS CLOUDY
WITH SLIGHT SEDIMENT. 11:15 AM.

~~Secondary~~ STA#2 BOILER ROOM DISCHARGE AT CANAL BACK
ABOUT 5 FT. DOWN. SAMPLE WAS CLOUDY WITH
SLIGHT SEDIMENT. 11:45 AM

~~Tertiary~~ _____

OIL CLEANUP: ED GANS, THE FOREMAN, PUT AN ABSORBENT PLASTIC
FIBER INTO CANAL BETWEEN CANAL WALL & BARGE WHICH ON
~~Elimination~~ SOAKS UP OIL. HE THEN INSTRUCTED TWO
SUBORDINATES TO DO LIKEWISE UNTIL THEY HAD ALL THE
OIL CLEANED UP.

Effluent Appearance: STA#1 PTP CL₂ CONTACT MANHOLE. SAMPLE
SEMI-CLEAR 11:00 AM

Receiving Stream: _____

Samples Obtained: STA#1 1 GAL, 1 qt. R#D#4518 1 BACT R#D#76-397 / STA#2 1 GAL.

Photos Taken: 1 qt. 1 / TRACE MET R#D#4519 / STA#11 1 GAL, 1 qt. R#D#4520

Inspection Made By: John M. May WS

METROPOLITAN SANITARY DISTRICT

Private Treatment Plant Inspection

Name HADDAM INLAND WATERWAYS Date of Inspection 11/9/76
 Address RTE 83 & 171 Plant Operator on Duty _____
 Town LEMONT Not Present ☐ Sunny, Low 50's

PLANT CONDITION:

~~Primary~~ OIL CLEANUP: CONTACTED FOREMAN FAGENS, WHO
SUPERVISED CLEANUP, A SLIGHT RAINBOW REMAINED
BUT EMPLOYEES OF THE COMPANY WERE RECTIFYING
Secondary THIS SITUATION) AT THE TIME I WAS
PRESENT

Tertiary _____

Chlorination _____

PP CL₂ CONTACT MANUALE

Effluent Appearance: STA #1 (SAMPLE TAKEN) WAS CLEAR 11:55 AM.

Receiving Stream: _____

Samples Obtained: STA #1: 1 GAL & 18 OZ. R&D #45514 / RACT R&D #76-3215

Photos Taken: _____

Inspection Made By: John M. Miller W.S.

005

METROPOLITAN SANITARY DISTRICT

Private Treatment Plant Inspection

Name HANNAH INLAND WTWY. Date of Inspection 11-22-26
 Address RT 63 & RT 171 Plant Operator on Duty DINO FABBRE
 Town LENHOUT Not Present ☐ CLOUDY 30'S

PLANT CONDITION:

Primary RAINBOW OIL SLICK IN MIDDLE OF
CANAL, NONE OBSERVED NEAR BANK OF
PROPERTY

Secondary _____

Tertiary _____

Chlorination STA 1 11:00AM CHLORINE CONTACT
MANHOLE CLEAR, GOLD TINT

Effluent Appearance: STA 2 11:20AM BOILER ROOM PIPE
DISCHARGE TO CANAL (ADJACENT TO PUMP HOUSE) SEMI CLEAR

Receiving Stream: STA 1 11:10AM { CS & SC, intake Rk.
CIRCULATING PUMP, PIPE DISCHARGE
TO CANAL (ADJACENT TO BOILER ROOM) SEMI-CLEAR

Samples Obtained: STA 1 9AL LAB # 4915 BACT # 76-3414

Photos Taken: STA 2 9AL LAB # 4916 BACT # 76-3415
STA 1 9AL LAB # 4917 BACT # 76-3416

Inspection Made By: A. P. Smith & W. S.

10/24/26
 70-7-1

METROPOLITAN SANITARY DISTRICT

Private Treatment Plant Inspection

Name HANNAH INLAND WATERWAYS Date of Inspection 1-12-77
Address RT 83 + RT 171 Plant Operator on Duty _____
Town LE MONT Not Present ☒ CLEAR 0°-10°

PLANT CONDITION:

Primary RAINBOW SLICK ALONG BANK
BETWEEN BARGES + BANK, ALSO 2 FT
OUT INTO CANAL

Secondary _____

Tertiary _____

Chlorination _____

Effluent Appearance: STA 1 12:45 PM CHLORINE CONTACT MANHOLE
CLEAR SLT. SED

Receiving Stream: STA P 12:50 AM CS+SC OPPOSITE PUMP
HOUSE BETWEEN BARGE + BANK - TRACE OIL

Samples Obtained: STA 1 GAL QT LAB# 6966 BACT# 77-0137

Photos Taken: STA P QT LAB# 6967

Inspection Made By: J. Devine J.W.S.

007

METROPOLITAN SANITARY DISTRICT

Private Treatment Plant Inspection

Name Hannah Inland W.W. Date of Inspection 2-4-77
 Address P.O. 83 + 171 Plant Operator on Duty _____
 Town Lemont Not Present ☒ snowing low 20's

PLANT CONDITION:

~~Primary~~ Sta "P" oil between bank & barge

Secondary

Tertiary

Chlorination 10⁴⁰ AM, Sta "P" No sample, due to hazardous conditions along bank of CS + SC

Effluent Appearance: 10⁴⁰ AM, Sta #1 Chlorine contact man - hole clear, light green tint

Receiving Stream:

Samples Obtained: Sta #1, 1 gal, 1 lacte

Photos Taken: #7719 #77-0375

Inspection Made By: R. Koryk S.W.S.

North Harlem Avenue
Ever Forest, Illinois 60303
CO 1-8400 FO 9-9420

AREA 700
Case # 7-137-79
Date: 10/27/79
Time: 10:00 a.m.

Name of Stream: Calumet Sag Channel

Assignment: Agency MSD Dept. I.W. Name Venuso

Nature of Violation: Industrial Waste Domestic Waste Encroachment Erosion
Debris Filling Dumping Other _____

Priority: Hot Line Urgent Continuous Intermittent Other _____
Floating Oil

(Facing Downstream)
Location: In the Stream Right Bank Left Bank Other _____

Nearest Municipality Lemont to the West Unincorporated Lemont Twnshp.

Address or Location Cal Sag Bridge on Route 83

Street Intersection or Bridge South side Cal Sag West side bridge

Identifying Landmarks _____

Additional Directions _____

Sketch Attached Will Accompany _____ Phone _____

Source of Pollution _____ Verified _____ Suspected _____

Color Clear Muddy ** Brown Red Milky Other _____

Scum: None *** Oil Foam Algae Other Chemicals in or on water very possible

Odor: None Slight Putrescent Nauseating Other _____

Solid Material: Trees Other 55 Gal. drums tipped over in area

Remarks: I was on my way to job, therefore, did not have time to examine what appeared to be floating oil on ponded water south of Cal Sag embankment. I might not have been able to get to site anyway. I was also involved in an accident. I flagged traffic to the south of bridge. Did not note from bridge 75 feet in air any connection to waterway, but Sag bridge quadrangle HA-149 flood hazard map shows unnamed small creek to the west between junction with Ship Canal and Cal Sag bridge draining to Cal Sag. Called local sewers on Monday and they reported to Industrial Waste.

Attach photos, news items, etc. when available

Observers Lyman Anfield

Phone _____

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

INDUSTRIAL WASTE CONTROL SECTION

SPECIAL INVESTIGATIONS - #4631 - Complaint # 511

Date Oct. 29, 1979 Time 0815

COMPLAINANT:

Name: Lyman Anfield Agency: Clean Streams Committee

Address: Phone: 532-4650

Date-Time of Incident on-going

TYPE OF COMPLAINT: Sewer ☐ Waterway ☒ Other

Location: Cal.-Sag. & Route 83

Type of Pollution: Oil under the bridge with 55 gallon drums on the bank.

INITIAL CONTACT: Main Office Dispatcher

I.W.C. X Other

RECEIVED IN FIELD BY: N. Venuso - PCO III

DISPATCHED TO: Name J. Corcoran Title PCO II

Date October 29, 1979 Time 0825

PRELIMINARY REPORT: POLLUTION CONTROL OFFICER F. Clark and W. Hayes

responded. A large area of standing water was found which had a white deposit

on the bottom and a pH of 11+. (See photo #7) A tank truck was observed discharging

to an adjacent holding pond which was overflowing to this area (see photo #6).

The water was collecting in a low area and no discharge to the CSSC or the ISM

Canal was observed.

Deno Fabbre of Hannah Inland Waterways Corp. was contacted and the area

was inspected. The tank truck was found to be discharging clear water with a pH

of 11+. Mr. Fabbre said this was water from the oil separator used to recover

Signature: F. Clark Date November 5, 1979

F. Clark, PCO-I

Special Investigations #4631
Complaint #511

- 2 -

oil cleaned from oil barges. He had no explanation for the high pH levels.

No discharge was found to either the CSSC or the I&M Canal. However, samples were collected from the holding basin and submitted to the R & D Laboratory as waterway samples to determine the nature of the material. It was pointed out to Mr. Fabbre that if the material flowed to a waterway it would be a violation of the MSD Ordinance. He said he would build a dike around the area to prevent this.

R. Sustich of the North Central Section conducted a followup investigation after heavy rains.

F. Clark

J. C. Carson
lit

011

I W C FIELD OPERATION - SPECIAL INVESTIGATION

Subject of Investigation:

Hannah Inland Waterways
Rte's 171 & 83
Lemont, Illinois

Date of Investigation:

November 2, 5-9, 1979

Mr. Deno Fabbre, Yard Supt. Phone: 242-3210

Originated by: Main Office ☐
Trt. Plant ☐ Clean Streams ☐
Other ☐ Local Authority ☐

<u>Person</u>	<u>Date</u>	<u>Time</u>
4631- #511		
Follow-up		

Type of Complaint:

Waterway ☒ Sewer ☐ Other ☐

Illinois & Michigan Canal

Supervisor Assigned:

Sustich, O'Brien, Hubbard

Water Samplers:

Sample ☐

Photographs ☐

Additional Information Attached ☒

INVESTIGATION:

This report concerns a follow-up investigation of 4631-#511 concerning possible sludge or waste dumping at the subject company.

Investigation on October 29, 1979, by F. Clark, PCO I, and W. Hayes, PCO I, resulted in the observation of company personnel applying alkaline waste waters to one of several ponds at the north end of the facility. No discharges to either the Chicago Sanitary and Ship Canal or the Illinois and Michigan Canal were observed at the time.

November 2, 1979

The writer, accompanied by D. Hubbard, PCO I, visited the facility to survey the accumulations of waste waters.

Investigators at this time observed two accumulations of waste at the north end of the facility. These were a shallow pool of highly alkaline water (pH=11+) containing approximately 2,000 to 5,000 gallons and a deeper, diked-in pool containing 300 to 500 cubic yards of very viscous, dark brown, organic sludge. This material in the second pond had extremely strong odors of styrene, toluene, and xylene, and subsequent tests of the head space above solid samples in closed containers revealed a 20% LEL.

At the south end of the facility, investigators noted a much larger pool of varying depths on the order of 50,000 to 100,000 gallons. This pool also exhibited a high pH condition, strong odors of styrene, toluene, and xylene, a 10% LEL, and what appeared to be a visible, polymerized plastic sludge lining the pond.

- continued -

At several locations near the north pools, investigators also found large areas of alkaline residue from previous ponds.

Inspection of the Illinois and Michigan Canal revealed a band of leachate approximately 20 to 30 feet in length and roughly corresponding to the eastern most edge of the larger north sludge pond. This point is 100 to 120 feet from the pond. The leachate at this point consisted of alkaline waters carrying a brown oil with aromatic odors similar to the ponds. Samples of the leachate were obtained at this time.

Investigators contacted Mr. Deno Fabbre, Yard Superintendent, to initiate clean-up operations and to develop a method to intercept the leachate.

Mr. Fabbre indicated that he was aware of the accumulated wastes and had contracted earth-moving equipment to bury the ponds. The company was not yet aware of the leachate entering the Illinois and Michigan Canal. Mr. Fabbre also stated that the company had maintained a similar landfill at the northern site and that between 1965 and 1970 the entire site had been buried with clay and stone. Mr. Fabbre assumed that the present landfill operation was almost directly above the previous one. Mr. Fabbre stated that he was unaware of the necessity for obtaining permits for landfill operations.

The company was requested to deploy a boom at the leachate site and to maintain this boom to prevent further discharge to the waterway. The company was also requested to immediately abandon plans to bury the remaining wastes as it appeared that complete removal was necessary to prevent deterioration of the leachate condition.

November 5, 1979

The writer, accompanied by J. Tomaras, PCO III, A Giedraitis, PCO III, and D. Hubbard, PCO I, returned to the facility.

Investigators on this date found that the leachate of oil had increased considerably, but that the boom was effective in retaining the oil for clean-up.

After a complete survey of the facility, the conclusion was again reached that the only effective method of eliminating the problems would be the complete removal of the pooled liquids and the underlying contaminated soil.

Mr. Fabbre was informed of this conclusion and, in light of the history of this site, concurred. The company contacted several waste disposal firms regarding clean-up operations.

- cont. -

November 6, 1979

The writer, accompanied by D. Hubbard, PCO I, surveyed the facility with Jack Barnett, Illinois Environmental Protection Agency. Mr. Barnett confirmed the need for complete removal of material from the site.

November 7, 1979

The writer, accompanied by T. O'Brien, PCO I, met Officers F. McLean, G. Burgey, J. Finnern, and S. Dormady of the United States Coast Guard.

Although all parties agreed that the problem had not reached a navigable waterway, the USCG initiated action to facilitate the issuance of an IEPA waste hauling permit necessary to conduct clean-up.

The company on this date selected Browning-Ferris Industries of Lemont, Illinois to conduct clean-up.

November 8, 1979

T. O'Brien and the writer met with G. Zurowski, Sales Engineer of Browning-Ferris Industries and Mr. Fabbre regarding clean-up operations.

Investigators on this date noted the installation of a sump, located between the ponds and the I & M Canal, to intercept the leachate. The accumulated water in the sump was alkaline and showed the same brown oil as the leachate site. Mr. Fabbre indicated that several more sumps would be installed to intercept the leachate flow as soon as possible.

The sumped waste, as well as the surface accumulations, will be removed to the Browning-Ferris Industries' ~~Benton~~ Harbor facility in Waukegan, Illinois.
Waukegan

A total of 12 samples were obtained during this investigation. All samples were delivered to the R & D Lab at the West-Southwest Plant for analysis. Included with this report are four photographs of the northern ponding area.

A significant anomaly observed during this investigation is the presence of brown oil at both the leachate site and the sump while the pooled liquids appeared relatively oil free. This, along with the higher elevation of the pooled liquids, suggests the possibility that the visible oil may have a subsurface origin and that the recent surface actions have facilitated its release. Although information concerning the previous landfill operation is extremely sketchy, it appears that the volume of material buried between 1965 and 1970 may far exceed the present surface accumulation. It is recommended that, concurrent with clean-up operations, an investigation into subsurface accumulations be conducted as part of a complete estimate of the impact of these landfill operations.

- cont. -

Table 1. Canal Seepage Samples of 7 N or 79

Hannock Inland Waterways, Lemont

Compound	Amount Detected in Supernatant	
	South Pond	North Pond
m-xylol ethyl ketone	4.5 mg/l	18.5 mg/l
styrene (monomer)	none	none
Benzene	none	none
Toluene	none	none
o-xylene	none	none
m-xylene	none	none
p-xylene	none	none
phenol	none	212 mg/l
ethyl acetate	none	none
isobutanol	none	none
benzoic acid	none	none

Detection limits are 1-2 mg/l each compound, except for benzoic acid, which has a detection limit of 4 ppm or 4 mg/l

Date

11/5/79

Co. Name

Harrah Island Waterways

Co. Address

Reason for Issuance of Violation #

19-687

T. Conway's report of 9/4/79 indicates
that 20,000 gal/month of waste oil
is hauled by Pierce Oil Co., Springfield
for disposal. Company has not reported
any of this disposal through Manifest
Violation issued for failure to report
shipping hauling since March 1, 1979

Action to be Taken

On next shipping and of waste oil
generated for month, must identify
name of hauler & disposal site.

On next reports the hauling of this
material through Manifest forms.

Signed J

cc: Jerry Tobias

THE METROPOLITAN SANITARY DISTRICT OF
GREATER CHICAGO

DEPARTMENT: RESEARCH AND DEVELOPMENT

DATE: Nov. 13, 1979

TO: Allen S. Lavin, Attorney

FROM: Cecil Lue-Hing

SUBJECT: HANNAH INLAND WATERWAYS LOCATED AT THE JUNCTION
OF THE MAIN CHANNEL AND THE CAL-SAG CHANNEL

On October 29, 1979, in response to a complaint from the Clean Streams Committee, personnel of the Industrial Waste Division of the Research and Development Department conducted an inspection of the property leased by the Hannah Inland Waterways Corp. from the Metropolitan Sanitary District of Greater Chicago. This inspection revealed that the company is now operating a barge cleaning facility and is using a portion of the property that they lease from the District for their industrial waste. This site was not approved by any District personnel nor was the District informed that the company was engaging in commercial barge cleaning operations. The material that has been disposed of on the ground and in pits has a low flash point, a high pH value and is oily in nature.

It is recommended that the Law Department immediately issue a 60 day eviction notice to the Hannah Inland Waterways Corp. for violation of their lease and to require that all material having been deposited in an improper manner be removed from District property to an authorized site. That after the waste material has been removed the contaminated ground also is to be excavated and removed from the District property to a proper disposal site and clean approved back-fill material be deposited on the MSD property in its place.

If the company intends to continue its barge cleaning operation they should be required to install closed holding tanks for their waste material. These tanks are to have dikes that will contain a minimum of 110% of the total capacity of the tanks that the dikes surround and that there be proper loading and off-loading facilities constructed for the handling of this waste material.

If you require further information regarding this matter, please contact Mr. Stanley W. Whitebloom at 751-5697.

Cecil Lue-Hing

Cecil Lue-Hing
Director
Research and Development

017

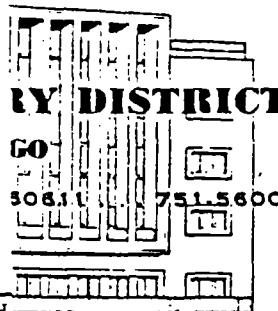
CLH:SWW:dc

No. 113193

RECEIPT FOR CERTIFIED
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO Hannah Inland W.	
STREET AND NO.	
P.O. Box 189	
P.O. STATE AND ZIP CODE	
Lemont, Ill. 604	
POSTAGE	
CERTIFIED FEE	
SPECIAL DELIVERY	
RESTRICTED DELIVERY	
SHOW TO WHOM AND DATE DELIVERED	
SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	
SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	
SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	
CONSULT POSTMASTER FOR FEES	
OPTIONAL SERVICES	
RETURN RECEIPT SERVICE	
TOTAL POSTAGE AND FEES	
POSTMARK OR DATE	

PS Form 3800, Apr. 1976



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IN THE NAME OF
THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO
COOK COUNTY, ILLINOIS

THE METROPOLITAN SANITARY)
DISTRICT OF GREATER CHICAGO)
vs.)
HANNAH INLAND WATERWAYS)
)
)

COMPLAINT NO. 79-687

NOTICE OF VIOLATION

TO: Mr. Carl F. Lambert, Mgr. Safety & Compliance
P.O. Box 189
Lemont, Illinois 60439

Investigation has revealed that you have failed to comply with the requirements for reporting to the Sanitary District concerning the transfer and disposition of industrial waste sludges or production residues, and are therefore in violation of Article IV, Section 3 of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago. Your violation consists of: failure to disclose to the Sanitary District, in writing, in forms furnished by the Sanitary District, the quantity, volume and chemical composition of industrial waste sludge or production residue delivered since March 1, 1979 to a scavenger or other entity hired to transport and/or dispose of same, and to identify the name and address of such scavenger.

You or your authorized representative, are requested to appear at 100 E. Erie St., Industrial Waste Division, Room 413, Chicago, Illinois on December 3, 1979 at 11:00 a.m. to conciliate on the subject matter.

YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH PENALTY AND LEGAL ACTION AS PROVIDED BY LAW.

Jerome Tobias
Jerome Tobias
Chief Enforcement Officer

k

Witness November 19, 1979
The Metropolitan Sanitary District
of Greater Chicago
Hugh H. McMillan, General Superintendent

By *C. Lue-Hing*
Cecil Lue-Hing, D.Sc., P.E.
Director
Research and Development

018

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

INDUSTRIAL WASTE CONTROL SECTION

SPECIAL INVESTIGATIONS - #4631 - Complaint # 548

Date 11/25/79 Time 11:00 P

COMPLAINANT:

Name: Officer Lee Brannam Agency: Willow Springs Police Dept.

Address: 8480 Archer Willow Springs Phone: 839-2721

Date-Time of Incident 11/25/79 now

TYPE OF COMPLAINT: Sewer ☐ Waterway ☐ Other Tank Truck Dumping

Location: 20 feet south of Desplaines River - 600 ft. East of Willow Springs Road.

Type of Pollution: Chemical dumped with strong odor

INITIAL CONTACT: Main Office _____ Dispatcher X

I.W.C. _____ Other Dispatcher called Mr. Dencek at his residence.

RECEIVED IN FIELD BY: J. Dencek at his residence

DISPATCHED TO: Name J. Corcoran Title PCO II

Date 11-25-79 Time 11:06 P.M.

PRELIMINARY REPORT: POLLUTION CONTROL OFFICER J. Corcoran called police to meet them at 8500 S. Willow Springs Road to proceed to the site for details of the nature of the complaint. Officer Brannam pointed out the chemical that was dumped located about 20 feet South of the bank of the Desplaines River and about 600 feet East of Willow Springs Road. The chemical was brown with a very strong odor. Quantity of chemical is about 15 to 20 gallons. It did not enter a waterway at this time but was dumped between the Desplaines River and the Main Channel. A grab sample was obtained at this time. (11:45 P.M.)

- continued -

Signature: _____ Date _____

4631-548
Chemical Dumped
Willow Springs, Illinois

- 2 -

Officer Brannam explained that Officer James Kubik was sent to make an investigation when strong odors were detected from Willow Springs Road which is about 600 feet from where the chemical was dumped. Officer Kubik returned to the Police Station when he became sick from the odors. Officer Brannam went to the site and found a Tank Truck moving slowly without lights. He took the license #24528. The driver explained that his truck had stalled and an employee from Ashland Chemical had to pull his truck to get it started and that he was going to pick up a load from the Barge at Ashland Chemical Co. Dock on the Main Channel which was presently being unloaded. When the truck left, an employee advised Officer Brannam that the truck was from Hannah Waterways Industries in Lemont, Illinois.

12:15 A.M. Called Mr. Whitebloom and informed him of investigation findings. He directed that the sample be delivered to Mr. Don Harper at the M.S.D. Main Laboratory in the morning and analyzed for nature of the chemical. He advised to have the police arrest the driver for violation of State Statute Chapter 42, Section 326.

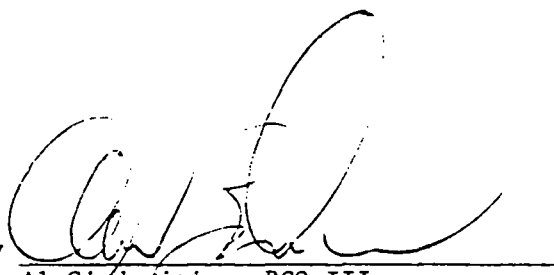
Officer Brannam stated that he did not see the driver dump and he was unable to get the truck registration on the leads machine.

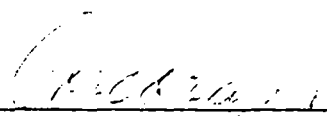
12:40 A.M. Officers Brannam and Kubik left the Police Station to go to Hannah Waterways Co. in an effort to locate the truck. They advised that any information they get will be reported to me tomorrow.

Willow Springs Police Station Complaint #16783.

12:45 A.M. Called M.S.D. Systems Dispatcher and informed him that I had called Mr. Whitebloom and informed him of this preliminary investigation. Investigation will terminate at this time with a scheduled follow-up in the morning.

Reviewed by


Al Giedraitis - PCO III


J. Corcoran - PCO II (Badge 111)

JC:k

I W C FIELD OPERATION - SPECIAL INVESTIGATION

Subject of Investigation:Date of Investigation:

Hannah Inland Waterways
Rts. 171 & 83
Lemont, Illinois

November 26, 1979

Originated by:

Trt. Plant ☐

Other ☐

Main Office ☐

Clean Streams ☐

Local Authority ☒

Type of Complaint:

Waterway ☐ Sewer ☐ Other ☐

Chemical dumped on Bank of Desplaines River

Supervisor Assigned:

R. Sustich, PCO I
J. Corcoran, PCO II

Person

J. Dencek

Date

11/25/79

Time

11:06 P

Water Samplers:

Sample ☒

Photographs ☐

Additional Information Attached ☐

INVESTIGATION: 4631-548 Follow-up investigation of chemical dumped.

The one quart sample that was obtained of chemical that was dumped along the gravel road that is parallel with the Desplaines River that was obtained on the night of November 25, 1979, was delivered to Don Harper at the M.S.D. Main Laboratory today. He was advised to call Mr. Whitebloom to determine specific analysis to be performed.

Went to Ashland Chemical Co., 8500 S. Willow Springs Road, Willow Springs, Illinois. Contacted Mr. Arnold Tankerman who advised that he was unloading a barge of Toluene and Xylene to Ashland Chemical Co. facilities when he helped the driver of the Hannah Inland Waterways start his stalled truck due to a dead battery. He did not see the driver dump the Chemical. He stated that the driver was going to the Hannah Barge that was finished unloading and remove any remaining product. Mr. Arnonld advised that he did not call for the tank truck, as far as he knows the personnel on the Hannah Barge called.

The area where the chemical was dumped was checked in the presence of Mr. Arnold who opened the locked steel bar gate to the gravel road along the Desplaines River which is ingress and egress to Ashland Chemical Company barge dock facility. The dumped chemical was dispersed in puddles of water caused by the heavy rain. A careful check of the area determined that the chemical did not enter the waterways.

The gate has an M.S.D. lock and one from Ashland Chemical Co. The Company opens this gate for access to their Dock Facility and therefore should assume responsibility for scavengers that may enter and dump in this desolate area. This is M.S.D. property that has several piles of debris and discarded household appliances.

- continued -

Hannah Inland Waterways
Rts. 171 & 83
Lemont, Illinois

November 26, 1979

Went to Hannah Inland Waterways Company and located the tank truck with the same license number that the Willow Springs Police had taken from the truck that was at the site where the chemical was dumped (#24528).

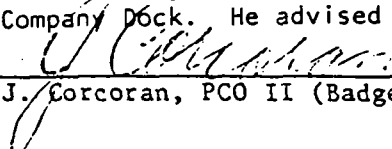
Contacted Mr. Fabbre, Supt. in his office and informed him of the chemical that was dumped and that his tank truck has the same license number that was taken by the Willow Springs Police at the dump site last night. He explained that he is aware of his truck being at the barge at Ashland Chemical Company to remove the remaining product from the barge when the unloading was finished, however, he does not have any knowledge of the driver dumping anything. When the driver reports to work this afternoon he will ask him about it. He was informed that a Sludge Manifest Form should be completed when he removes product from barges.

He was present when a sample was taken of the contents in the truck from a hatch on top of the truck tank. A sample was also taken from a small puddle on the ground at the valve on the rear of the truck tank. He advised that the product removed from the barges is put in the company separator.

Went to the Willow Springs Police Station and advised Officer Ralph Oliver that the truck was located at Hannah Inland Waterways. He was of the opinion that an arrest would not be may due to lack of evidence.

The two samples that were obtained were delivered to Don Harper at the Main Laboratory for comparison analysis. Transporter of the samples was R. Sustich, PCO I.

Called Mr. Fabbre, November 30, 1979, and he said he talked to the driver and the driver told him that he did not dump the chemical, that the truck was empty when he left for the barge at Ashland Chemical Company Dock. He advised that the driver's name is Joseph Gutierrez.


J. Corcoran, PCO II (Badge #111)

Reviewed: 

Al Giedraitis, PCO III

JC:k

NICHOLAS J. MELAS
PRESIDENT



THE
METROPOLITAN SANITARY DISTRICT
OF GREATER CHICAGO

100 EAST ERIE ST., CHICAGO, ILLINOIS 60611 751-5600

BOARD OF COMMISSIONERS

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General Superintendent
751-5722

REGISTERED MAIL
RETURN RECEIPT REQUESTED

November 26, 1979

Mr. James A. Hannah
Hannah Inland Waterways Corporation
P. O. Box 189
Lemont, Illinois 60439

SUBJECT: 90-DAY NOTICE OF TERMINATION OF LEASE dated
September 14, 1961 between The Metropolitan
Sanitary District and Hannah Inland Waterways
Corporation.

Dear Sir:

Personnel of The Metropolitan Sanitary District of Greater Chicago Research and Development Department on October 29, 1979, inspected the property leased to Hannah Inland Waterways Corp., at the junction of the Main Channel and the Cal-Sag Channel, by virtue of a Lease Agreement dated September 14, 1961, and which is legally described in Exhibit A which is attached hereto and made a part hereof. The inspection revealed that the company is operating a barge cleaning facility on the property and is using a portion thereof for disposal of industrial wastes.

The material which has been disposed of on the ground has a low flash point, a high pH value and is oily in nature. The Sanitary District has not authorized this activity nor was it informed that the Lessee would engage in such operations. The disposal of this material on the premises is in direct violation of Sections 3.05 and 5.10 of the Lease. For particulars, see Exhibit 3 attached hereto.

Accordingly, HANNAH INLAND WATERWAYS CORPORATION IS HEREBY NOTIFIED, PURSUANT TO THE PROVISIONS OF PARAGRAPH 3.09 OF THE AFORESAID LEASE, THAT UPON THE EXPIRATION OF THE PERIOD OF NINETY DAYS (90) DAYS FROM ITS RECEIPT HEREOF, THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO WILL TAKE ALL STEPS NECESSARY TO TERMINATE SAID LEASE AND REMOVE HANNAH INLAND WATERWAYS CORPORATION FROM THE PREMISES.

November 26, 1979

Furthermore, you are required within 90 days of your receipt hereof to remove all improperly deposited material and contaminated earth to an authorized site and replace the contaminated earth with approved back-fill material to be deposited on the Metropolitan Sanitary District property in its place. In the event of your failure to do same, The Metropolitan Sanitary District of Greater Chicago will take all necessary steps to terminate said Lease and remove you from the premises. If Hannah Inland Waterways Corporation fails to remove this material, such removal may be performed by the Sanitary District and the costs charged to the Lessee pursuant to Section 5.10 of the Lease.

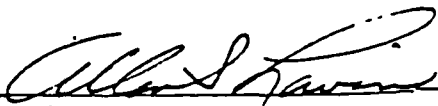
In the event that Hannah Inland Waterways Corporation desires to continue its barge cleaning operations in a manner permitted by the Lease, after the foregoing breaches of said Lease are rectified, the Attorney's Staff will be available for consultation with respect thereto.

Very truly yours,

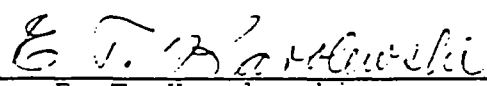
METROPOLITAN SANITARY DISTRICT
OF GREATER CHICAGO

By: 

Hugh H. McMillan
General Superintendent


Allen S. Lavin, Attorney

PREPARED BY:


E. T. Karolewski
Real Estate Administrator

HHM:ASL:ETK:FG:il

bcc: Jaskula/Lue Hing/File.

**THE METROPOLITAN SANITARY DISTRICT OF
GREATER CHICAGO**

DEPARTMENT: R&D

DATE: November 27, 1979

TO: Dr. N. Kelada, Head, Instrumentation & Methodology

FROM: D. W. Sher, Instrumentation Chemist 3

SUBJECT: Industrial Waste Sample #2190, Project 72-915-9A

A sample of a brown liquid floating on rainwater was submitted for qualitative analysis. The brown material had an odor characteristic of aromatic solvents, and had low viscosity. It did not appear soluble in water.

About 65 ml was spun down in the centrifuge to remove particulate matter. The supernatant was then distilled in the Mini-Lab setup. About 60 ml of a clear material was collected, distilling in a range of 132-140°C. The sample was not taken to dryness, although at the end of the distillation it was noted that the vapor temperature was wavering down slightly. A trace of water which came over initially was removed with sodium sulfate.

A drop of the original supernatant was evaporated on a NaCl plate for IR spectroscopy. The spectrum of this dark brown residue is shown in Fig. 1; the only bands observed being aliphatic C-H in the 2970-2850 cm^{-1} region and C-C bands at 1460 and 1380 cm^{-1} , typical of asphaltum.

The distillate was run in a 0.025 mm NaCl cell. The spectrum, Fig. 2, is much more complicated, with peaks characteristic of both aromatic and Aliphatic hydrocarbons present. A spectrum of authentic xylene (Fisher X-5, neutral histological) gave a spectrum that was qualitatively identical with quantitative differences attributable to a slightly different mix of xylene isomers.

In my opinion, this sample is asphaltum (5-10%) dissolved in mixed xylenes solvent.


David W. Sher

DWS:wd
attachments

THE METROPOLITAN SANITARY DISTRICT OF
GREATER CHICAGO

DEPARTMENT: R&D

DATE: November 28, 1979

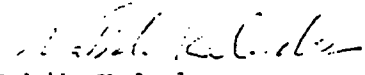
TO: Dr. David T. Lordi,  Coordinator of Technical Services

FROM: Nabih Kelada

SUBJECT: Industrial Waste Sample #2190

We have received the above special sample from Mr. D. Harper on Nov. 26. As per your directions it was analysed and found to contain the organic substances "asphaltum and mixed xylenes solvent".

Please find the enclosed detailed analytical report from Mr. D. Sher.


Nabih Kelada

NK:wd
attachments
cc: D. Sher

To Mr Donald Harper
This is results of special analysis on sample
collected by Industrial Waste Division from
Willow Springs area.

D. T. Lordi
11/28/79

XC Druck / Whiteblom



11-29-79
026

12.5-79 Hannah Marine Corp. (new name)

State they have contracted with Browning-Ferris to remove caustic from ponds along with contaminated sludge from bottom. (Waukegan)
Waiting for final IEPA signature on permit. Landfill
Have contracted with Petro-Chem to clean all caustic barges until they decide:

1. Clean no more caustic barges
2. Build a treatment plant for caustic washwater
3. Scavenge it.

Jack Barnett IEPA advised! Carnody
12/5/79

12/11/79 Mr. Updegraff came in to pick up 80 sludge forms.

1-11-80 Sustich - reaching to 1 + m still possible. Company to secure soil bore samples to determine how deep must go

**THE METROPOLITAN SANITARY DISTRICT OF
GREATER CHICAGO**

DEPARTMENT: R&D

DATE: December 17, 1979

TO: Dr. N. Kelada

FROM: D. W. Sher

SUBJECT: SPECIAL SAMPLES #2265-2266, PROJECT 72-915-0A

Two samples were submitted by Industrial Waste for identification. The samples were identified as follows:

#2265 Hannah Inland Waterways, Tank Truck (11/26/79)

#2266 Hannah Inland Waterways, Pool Beneath Truck (11/26/79)


Sample 2265 appeared to have an organic layer above a white water layer. Addition of NaCl to this lower layer showed it to be an emulsion of some organic material in water. The top (organic) layer was stripped in a lab distillation setup, with the material coming off between 130 C and 138 C, the expected range for xylene in this setup. IR spectroscopy gave positive identification of xylene.

The residue after evaporation was a liquid, clear with a brownish tinge. IR spectroscopy identified this material as aliphatic hydrocarbons. An aliquot of this residue was dissolved in n-hexane (5% v/v) and run on the Tracor 550 gas chromatograph, using a OV-1 methyl silicone column and flame ionization detector (FID). The resulting chromatogram was extremely complex, with most peaks eluting in the range expected for C_9H_{20} to $C_{12}H_{26}$ (defined from the hexane solvent peak and n-alkane standards C_8H_{18} through $C_{14}H_{30}$). Although I do not have any suitable standard for comparison, the molecular weight range appears reasonable for diesel fuel or #2 fuel oil.

Sample 2266 had insufficient material for distillation in our setup. IR spectra were run on the organic layer after drying with

TO: Dr. N. Kelada
FROM: D.W. Sher
SUBJECT: Special Samples #2265-2266, Project 72-915-OA
DATE: December 17, 1979

Na_2SO_4 , giving a spectrum similar to xylene, and the residue after evaporation, again an aliphatic hydrocarbon. The residue after evaporation was a dark brown solid. In general, Sample 2266 resembled sample 2190 previously reported, a dark brown aliphatic residue dissolved in xylene.


David W. Sher

DWS:wd

*File
Hannah Inland
Waterways*
**THE METROPOLITAN SANITARY DISTRICT OF
GREATER CHICAGO**

DEPARTMENT: R&D

DATE: December 18, 1979

TO: Dr. David T. Lordi, Coordinator of Technical Services

FROM: Nabih Kelada

SUBJECT: INDUSTRIAL WASTE TWO SAMPLES #2265 & #2266

We have received the above special two samples identified
as:

#2265 Hannah Inland Waterways, Tank Truck (11-26-79)

#2266 Hannah Inland Waterways, Pool Beneath Track (11-26-79)

As per your directions they were analysed for probable identification. Please find the enclosed detailed analytical report from Mr. D. Sher.

Nabih Kelada
Nabih Kelada

NK:wd
attachments
cc: Mr. D. Sher

TO: Stanley Whitebloom
Coordinator of Industrial Wastes

Enclosed are results of analysis of subject Industrial Waste samples. The materials appeared to be an aliphatic hydrocarbon (possibly fuel oil) dissolved in xylene.

David T. Lordi
David T. Lordi
12/20/79

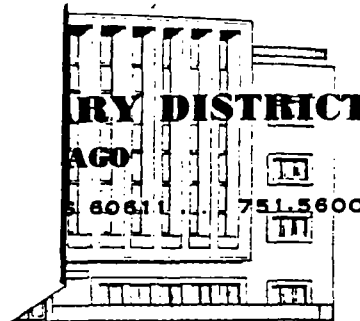
cc: D. Harper
J. Dencek
N. Kelada

No. 111340

RECEIPT FOR CERTIFICATE
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO HANNAH MARINE CORP.		STREET AND NO. P.O. BOX 189		P.O. STATE AND ZIP CODE Lemont, IL 60439	
POSTAGE		CERTIFIED FEE		SPECIAL DELIVERY	
CONSULT POSTMASTER FOR FEES		OPTIONAL SERVICES		RETURN RECEIPT SERVICE	
		RESTRICTED DELIVERY		SHOW TO WHOM AND DATE DELIVERED	
				SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	
				SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	
				SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	
		TOTAL POSTAGE AND FEES		POSTMARK OR DATE	

1800, Apr. 1976



BOARD OF COMMISSIONERS

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CHESTER P. MAJEWSKI
NICHOLAS J. MELAS
RICHARD J. TROY

IN THE NAME OF
THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO
COOK COUNTY, ILLINOIS

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO)

COMPLAINT NO. 79-779

Vs.)

HANNAH MARINE CORP.)

WATERWAY)

NOTICE OF VIOLATION

TO: Mr. Dave Updegraf
Vice President Ops.
P.O. Box 189
Lemont, Illinois 60439

FACILITY
Chicago Sanitary and Ship Canal
at Cal-Sag Junction

Investigation has revealed that you are in violation of Appendix A of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago and the applicable State Statutes pertaining to pollution. Your violation consists of: discharging an effluent with excessive concentrations of fats, oils or greases (753 mg/l) which was also visible, suspended solids (290 mg/l) and ammonia as N (13.3 mg/l) all in a grab sample at 11:15 AM on 11/2/79, into the Illinois and Michigan Canal.

You or your authorized representative, are requested to appear at 100 E. Erie St., Industrial Waste Division, Room 413, Chicago, Illinois on January 13, 1980 at 11:00 AM to conciliate on the subject matter, and to submit, at that time, a plan and schedule for abatement of such pollution. Direct phone inquiries should be made to Jerome Tobias at 751-5697.

YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH PENALTY AND LEGAL ACTION AS PROVIDED BY LAW.

Jerome Tobias
Chief Enforcement Officer

TC/jcb

Witness December 21, 1979
The Metropolitan Sanitary District
of Greater Chicago
Hugh H. McMillan, General Superintendent
By C. Lue-Hing
Cecil Lue-Hing, D.Sc., P.E.
Director
Research and Development



POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

Signed By HQ

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME CHURCH HANNAH INLAND WATERWAY
B. STREET (or other identifier) RT 83 & 107th St
C. CITY Deer Park
D. STATE Ill.
E. ZIP CODE 60439
F. COUNTY NAME COOK

G. OWNER/OPERATOR (if known)
1. NAME METROPOLITAN SANITARY DISTRICT
2. TELEPHONE NUMBER 312-751-5697

H. TYPE OF OWNERSHIP
☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☒ 4. MUNICIPAL ☐ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION PROPERTY adjacent to ~~CHURCH HANNAH~~ DES PLAINES RIVER
Leaching Chemicals into I + M CANAL

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.)
COMPLAINT from Cook County CLEAN Commission
K. DATE IDENTIFIED (mo., day, & yr.) 11-7-79

L. PRINCIPAL STATE CONTACT
1. NAME JEROME TOBIAS
2. TELEPHONE NUMBER 312-751-5697

II. PRELIMINARY ASSESSMENT (complete this section last)

M. APPARENT SERIOUSNESS OF PROBLEM
☒ 1. HIGH ☐ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE ☐ 5. UNKNOWN

N. RECOMMENDATION

O. NO ACTION NEEDED (no hazard)
☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:
☒ 1. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR: Done
b. WILL BE PERFORMED BY: METRO. SANITARY DISTRICT
☐ 4. SITE INSPECTION NEEDED (low priority)

P. PREPARER INFORMATION

1. NAME Phyllis A Reed
2. TELEPHONE NUMBER 886-6223
3. DATE (mo., day, & yr.) 1-21-80

III. SITE INFORMATION

Q. SITE STATUS
☒ 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)
☐ 2. INACTIVE (Those sites which no longer receive wastes.)
☐ 3. OTHER (specify):
(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

R. IS GENERATOR ON SITE?

☐ 1. NO ☒ 2. YES (specify generator's four-digit SIC Code):

S. AREA OF SITE (in acres)

T. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES

1. LATITUDE (deg.-min.-sec.)

2. LONGITUDE (deg.-min.-sec.)

U. ARE THERE BUILDINGS ON THE SITE?

☐ 1. NO ☒ 2. YES (specify):

- ☐ 1. NPDES PERMIT ☐ 2. SPCC PLAN ☐ 3. STATE PERMIT (specify): _____
☐ 4. AIR PERMITS ☐ 5. LOCAL PERMIT ☐ 6. RCRA TRANSPORTER
☐ 7. RCRA STORER ☐ 8. RCRA TREATER ☐ 9. RCRA DISPOSER
☐ 10. OTHER (specify): _____

B. IN COMPLIANCE?

- ☐ 1. YES ☐ 2. NO ☐ 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): _____

VIII. PAST REGULATORY ACTIONS

- ☐ A. NONE ☐ B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

- ☐ A. NONE ☐ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

X. REMEDIAL ACTIVITY (past or on-going)

- ☐ A. NONE ☐ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
Cleanup - ongoing		Metric Systems, Inc. - DETROIT	Asbestos abatement

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

The property MSD should 90 day location protocol be conducted. When company is finished MSD should be complete. Cleanup of facility and is monitoring that activity.

CONCILIATION AGREEMENT

This AGREEMENT, entered into by and between the METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO, a Municipal Corporation, organized and existing under and by virtue of the laws of the State of Illinois, hereinafter called the "DISTRICT" and

VIOLATION	<u>79-779</u>
NOTICE#	<u>1</u>
HEARING	<u>1</u>
DATE	<u>1/28/80</u>

Hannah Marine Corp., Lemont, Illinois

hereinafter called the "COMPANY":

MSD Treatment Plant _____ MSD Waterway I & M Canal
Alleged Violations F.O.G. (visible) Tss, ammonia

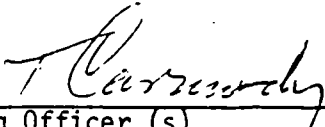
WHEREAS it has been alleged that the COMPANY has been and/or is presently in violation of the pollution laws contained in the Sewage and Waste Control Ordinance; WHEREAS parties agree to conciliate; NOW, THEREFORE, it is agreed that the COMPANY will attain compliance as follows:

Co. reports that it has removed the liquid caustic from the south pond and has excavated solids from same. It has sunk several sumps to accumulate oil from subsurface and believes it has prevented continued leaching to the I & M Canal. It is maintaining a boom and absorbent pads at the point where leaching occurred.

Co. has had core samples taken, but has not received a report.


Co. will return on Feb. 26, 1980 at 10:00 am to report.
MSD or Hannah may request a meeting before that date.

COMPLIANCE DATE: _____

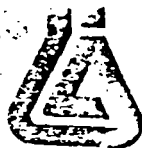


Hearing Officer (s)
T. Carmody

S. H. G.



Company Representative (s)
Dave Updegraf, V.P.
Nick Lambert, Safety Mgr.
J. W. McMurray, Atty.



18 February 1980

Mr. Dino Fabbre
HANNAH INLAND WATERWAYS CORP.
P.O. Box 189
Lemont, Il. 60439

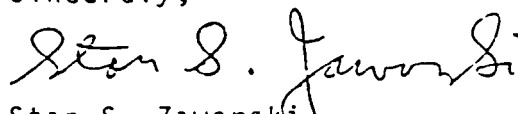
Dear Mr. Fabbre:

Enclosed please find a copy of the results for soil samples from boring locations B-1, B-2, and B-3. All answers are reported on a dry weight basis.

Also enclosed is a copy of the results for boring #B-2, sample #S-5+5A, AQLS #67114QA. As part of our Quality Assurance Program, this sample was completely run twice at no charge. This can give you an idea as to the reproducibility of each individual test.

We wish to thank you for the opportunity to be of service. If you need further assistance or have any questions, don't hesitate to call.

Sincerely,


Stan S. Zaworski
General Manager

SSZ/hn

enclosures



analytical report

analysis no.: 67107

4 February 1980

Depth (ft.) 8 1/2 - 10

HANNAH INLAND WATERWAYS CORP.

P.O. Box 189

Lemont, Il. 60439

Attn: Dino Fabbre

SAMPLE

DESCRIPTION: Boring # B-1 Sample # S-2+2A

date taken:

date received:

date analyzed:

1/30/80

1/30/80

Arsenic	10.0	ppm
Cadmium	2.43	ppm
Chromium, total	11.8	ppm
Copper	50.4	ppm
Lead	79.6	ppm
Mercury	<0.01	ppm
Nickel	20.	ppm
Zinc	118.	ppm
Phenol	<0.01	ppm
Cyanide	<0.01	ppm
COD	106,000.	ppm
TOC	4.60	%

*All answers ppm on a dry weight basis

CONCILIATION AGREEMENT

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SANITARY DISTRICT OF GREATER CHICAGO, a Municipal Corporation,
organized and existing under and by virtue of the laws of the
State of Illinois, hereinafter called the "DISTRICT" and

VIOLATION	<u>79-779</u>
NOTICE#	<u>1</u>
HEARING	<u>4</u>
DATE	<u>5/21/80</u>

FID 362 60 8994-00

HANNAH MARINE CORPORATION
Chicago Sanitary & Ship Canal at Cal-Sag Junction
Lemont, IL

hereinafter called the "COMPANY":

MSD Treatment Plant _____ MSD Waterway I & M Canal
Alleged Violations Fats, oils or greases; visible oil; total suspended solids; ammon

WHEREAS it has been alleged that the COMPANY has been and/or is presently in violation of the
pollution laws contained in the Sewage and Waste Control Ordinance; WHEREAS parties agree to
conciliate; NOW, THEREFORE, it is agreed that the COMPANY will attain compliance as follows:

Company states after they enlarged their three sumps along
the I & M Canal they found that they did not require an
automatic sump pump. Material collected in the sumps is
pumped to a vacuum truck for ultimate disposal. There is
no current seepage into the canal. The lagoon in the area
west of company buildings has been removed and the area is
to be regraded. The area around the sumps will also be filled
in.

Company states they are now in compliance with the MSD Ordinance.

Company was informed that they must send in MSD Manifest forms
whenever a load of sludge is being scavenged. Company filled
out white card requesting 12 forms.

COMPLIANCE DATE: NOW

E. Field
Hearing Officer (s)

E. Field

Nick Lambert
Company Representative (s)

Nick Lambert - Safety Mgr.

I W C FIELD OPERATION - SPECIAL INVESTIGATION

Subject of Investigation:

Hannah Marine Corporation
 Kingery Road At Archer Avenue
 Lemont, Illinois
 F.I.D. #362780828

Date of Investigation:

June 24, 1980

Mr. Carl Lambert - Mgr. of Safety &
 Compliance

Originated by:

Trt. Plant ☐
 Other ☐

Main Office ☐
 Clean Streams ☐
 Local Authority ☐

Type of Complaint:

Waterway ☒ Sewer ☐ Other ☐

Illinois & Michigan Canal

Supervisor Assigned:

R. Sustich
 R. Kaufmann

PersonDateTime

Violation #79-779

4-29-80

Water Samplers:

None

Sample ☒ 1Photographs ☒ 3Additional Information Attached ☒ 4

INVESTIGATION:

The writer, accompanied by R. Kaufmann - PCO II, visited the facility on June 25, 1980 to conduct a compliance inspection with regard to Violation #79-779.

Investigators met with Messrs. Carl Lambert, Manager of Safety and Compliance and Deno Fabbre, Yard Superintendent.

Inspection of the North (East) Pond area revealed that the company had adequately removed the deposited material and had installed several sump points to a depth of approximately 12 feet. Of these, three (3) points remain active, two (2) in the area of the pond itself, and one (1) intercepting sump near the Illinois & Michigan Canal. The company is maintaining these sumps once per week.

Inspection of the South (West) Pond revealed that essentially all of the 50,000 to 100,000 gallons of liquid had disappeared from the site. The company, in April - 1980, removed 5,000 gallons of "caustic wash", indicating that this was sufficient to empty the pond. The company feels that the remainder of the liquid (45,000 to 95,000 gallons) had evaporated during the period of inactivity between November, 1979 and April, 1980. The company also claims, in letter of April 29, 1980, that the area appears to be dry now. Contrary to company claims, the entire area of the South (West) Pond is presently covered by a viscous sludge up to 24 inches in depth. The volume of this sludge appears to be in excess of 10,000 cubic feet and perhaps significantly greater. This material has been found to exhibit a 40% LEL in the atmosphere above accumulations and also to emit detectable organic

Page -2-

Hannah Marine Corporation
Kingery Road At Archer Avenue
Lemont, Illinois
June 24, 1980

amines in the range from 0 to 50 ppm. The material also emits strong organic odors and visually appears oily in nature.

One sludge sample was obtained from the South (West) Pond. This sample was delivered to the R & D Lab at the West-Southwest Plant for analysis. Parameter to be analyzed was General Chemistry.

Presently, the company is in compliance for Violation #79-779 for discharging contaminants to the Illinois & Michigan Canal. However, the clean-up operation for the removal of barge cleanings has been less than satisfactory. The maintenance of 10,000 cubic feet or more of highly volatile organic sludge in open ponds constitutes a continued hazard to any persons near this facility. As such, total clean-up operation including removal of all contaminated soils remains necessary.

Total Samples: 1

Reviewed:

R. Kaufman
R. Kaufman - POC II

RS/hg

R. Sustich
R. Sustich - POC I - Badge #121

HANNAH MARINE

CORPORATION

KINGERY ROAD AT ARCHER AVENUE

LEVONT ILLINOIS 60439

(312) 242-3210

July 31, 1980

Mr. Thomas F. Carmody
Industrial Waste Division
The Metropolitan Sanitary
District of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611

*J. Dencek - Pls. inspect
and monitor situation. We
are concerned with the status
relative to mixing sludge with
clay. (J. Tobie 8/8/80)*

Re: Removal of waste residue from
west lagoon at Hannah Marine Corp.

Dear Tom:

Per our letter of July 8, 1980 we are updating the status of sludge removal from the west lagoon at Hannah Marine Corporation.

Deno Fabbre has had Adcock Construction Company come in with a 2 yard backhoe machine and a swamp cat bulldozer with 36" pads to excavate the material. We feel that about one more day's work with this equipment should finish the excavation portion. Then a determination based on analysis of the material can be made as to whether we blend the sludge with clay or take it directly to landfill.

I understand from Mr. Fabbre that one of your representatives was at our location this morning to witness that excavation is being properly accomplished.

We will report to you again by August 31, 1980 as to progress on removal.

Very truly yours,

HANNAH MARINE CORPORATION

David E. Updegraff

DAVID E. UPDEGRAFF,
Vice-President - Operations

DEU/gl

I W C FIELD OPERATION - SPECIAL INVESTIGATION

Subject of Investigation:

Date of Investigation:

HANNAH MARINE
Rte. 83 & 107th St.
Lemont, IL.

August 5, 1980

Originated by:

Main Office ☒

Trt. Plant ☐

Clean Streams ☐

Other ☐

Local Authority ☐

Type of Complaint:

Waterway ☐

Sewer ☐

Other ☐

Person

R. Kaufmann

Date

8-5-80

Time

Supervisor Assigned:

J. Kelly, C. Pulaski

Water Samplers:

Sample ☐

Photographs ☐

Additional Information Attached ☐

INVESTIGATION:

On August 5, 1980, the writer and C. Pulaski, PCO I, visited the subject facility to conduct an inspection regarding the progress of the clean-up being conducted by Hannah Marine of land previously used as a dump site for liquid waste from barge cleaning operations. We met with Mr. Dino Fabry, who took us to the areas in question, at the western part of the property where the company was in the process of removing the topsoil down to a solid clay base. The contaminated soil was piled up on the sides for removal by the company's contractor, H. Wigboldy & Sons Excavating, (Phone #785-2121). Mr. Fabry didn't know the future disposal site for this material at the time of this investigation. Pools of reddish-brown water at the sites were a result, according to Mr. Fabry, of previous rains. The pools did not exhibit any trace of oil and had a neutral pH.

The area at the east end of the property was then inspected where the company had previously completed a clean-up similar to their current activity at the western sites. The area was filled with a rock and dirt mixture. Three or four large sump pits and numerous scattered monitoring holes were dug to a depth of approximately 30 feet according to Mr. Fabry. The holes and pits contained water which exhibited a solvent-like odor. Oil-absorbent cloths were floating in the pits to absorb any oil floating to the top. There appeared to be only minor amounts of oil in these sump pits. Mr. Fabry then took us to the point in the Illinois and Michigan Canal where oil from area had previously seeped into the canal. There appeared to be a small metal boom in the canal at that point enclosing a small area of stagnant water upon which was a very faint sheen of what appeared to be oil.

Reviewed by:

R. Kaufmann

JK:fk

J. Kelly, PCO I, Badge #140

August 24, 1980
18034 Sayre Avenue
Tinley Park, Illinois 60477

Mr. Jack Farnan, Assistant to the President
Metropolitan Sanitary District of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611

File: Hannah Marine

Dear sir;

As you know I called your office and talked with you about the matter of the television expose (so called) of Hannah Inland Waterways Co. at mile 304 on the Chicago Sanitary and Ship Canal. As you know this location is near the junction of the Calumet Sag Canal and the Ship Canal. I told you two of your Industrial Waste people told me that Channel 7 television gave MSD a raw deal by doing a story about Hanna Inland Waterways and some suspected dumping at their MSD leased property. I did not see the segment on channel 7 although I do watch that station when I watch television. They have good people and do a good job. I called the station and talked with an aid of John Oxman the Business Manager of the station. I was then turned over to the snoop department of that station. They have a name for it, but I cannot remember it at this time. I was told that I would have to have the name of the writer and the day it appeared. Your Industrial Waste people knew neither the name of the writer nor the day it appeared. Maybe it was not even channel 7 that did the story. As it might be gathered I am not giving you much to go if you would care to see justice done and your people fairly treated. As you know the ancient Romans had a way with words. They said, "fiat justitia, ruat caelum" (let justice be done, though the heavens fall). I do think it advisable to pursue this matter and not take any crap from journalistic piss ants. I have been told that what they do to people who want to rebut their garbage is a crime. After they get done screwing it up (editing) it does not even sound like the person who wants justice done. People who have the last word are always to be feared. I could always complain the Federal government at the right time. I understand that the Feds are in the hip pocket of the rich television stations and that justice is a word in the dictionary as far as television is concerned.

As you know I am a member of the Cook County Clean Streams Committee and submitted this matter about Hanna some time ago. Although I haven't been that way for some time, I am satisfied from Clean Streams minutes and from talking with your people that the job of clean up is taking place. You should know that I am hard to satisfy as are many other of the Committee. I am enclosing the inspection report. I reported the wrong location in the report, but happily your people had no trouble finding the location.

Probably this winter since time is not of the essence in this matter and I will have time, I can go down and review the segment at the station and then ask for rebuttal time, if I think it justified. At present I am fighting the battle of the ragweed. I do not know what you can do to get me the facts I need or even if the matter is worthy of getting into a hassle with channel 7 about. I can not proceed until I know who the writer was and the day it appeared. I would appreciate any help you can give. Thanks for your help as always.

Sincerely yours

Lyman Anfield

Lyman Anfield, member Cook County Clean Streams Committee

Copy to Channel 7 Snoop Department and Cook County Clean Streams Committee.

Hannah Marine Corporation

Routes 171 & 83

Lemont, Illinois

Mr. Dino Fabre, Yard Superintendent

August 26, 1980

Originated by:

Main Office ☒

Trt. Plant ☐

Clean Streams ☐

Other ☐

Local Authority ☐

Type of Complaint:

Waterway ☒ Sewer ☐ Other ☐

Person

Date

Time

Progress Inspection

Supervisor Assigned:

R. Sustich, J. Kelly

Water Samplers:

None

Sample ☒

Photographs ☐

Additional Information Attached ☐

INVESTIGATION:

The writer, accompanied by J. Kelly, PCO I, visited the facility on August 26, 1980, at the company's request to inspect progress in the clean-up of the West Lagoon at this site. Contact was made with Mr. Dino Fabbre, Yard Superintendent, upon arrival.

An inspection of the West Lagoon area revealed that the company had accumulated approximately 1,000 cubic yards of sludge from dredging of the pond. Mr. Fabbre indicated that this material would be mixed with clay at a 2 to 1 ratio and disposed of at CID. The area of the lagoon was also observed to contain approximately 7,500 gallons of a red/brown liquid. This is the area which the company had previously maintained was dry. Mr. Fabbre stated that the new liquid was only rainwater, but was at a loss to explain the obvious discoloration. A sample of this liquid was obtained at this time.

Investigators also questioned Mr. Fabbre as to the changes in operation since dumping was discontinued late in 1979. Mr. Fabbre indicated that the company had been applying 100,000 gallons to the West Lagoon annually and that the lagoon had never evaporated to below the level observed in November, 1979 (approximately 100,000 gallons). Mr. Fabbre was questioned as to the disposal of the liquid layer during 1980, as the company could only account for 5,000 gallons removed. No explanation was offered as to why the West Lagoon had evaporated only during 1980 and not during previous years.

With regard to present barge cleaning operations, Mr. Fabbre indicated that the company maintains 4,000 gallons of clear water for spraying the interior of barges. The company recycles this water through a 168,000 gallon tank in which solids settle out and oil is separated out by natural flotation. Oil is then pumped off to a 40,000 gallon holding tank for scavenging or used as fuel. Mr. Fabbre stated that the company does not use any cleaning compounds and that the recycled water does not become contaminated and thus will not require disposal.

Investigators at this time noted a 5,500 gallon tank truck from Chemical Waste Management being filled with liquid from the 168,000 gallon separation tank. Mr. Fabbre stated that the tank presently contained approximately 40,000 gallons of solid sludge which the company was now removing to CID landfill. He also indicated that the "clear

(continued)

Hannah Marine Corp.
Routes 171 & 83
Lemont, Illinois

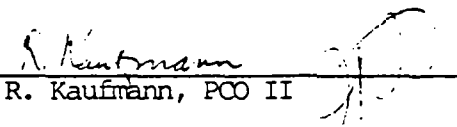
water" for barge cleaning was presently in this tank. A check of the water layer revealed an opaque oily tan liquid with pH = 11+. Mr. Fabbre indicated that this was the "clear water", but that it wasn't clear. During subsequent questioning, Mr. Fabbre could not explain the chemistry by which the company would be able to recycle wash water indefinitely without contamination when he was presently faced with the disposal of 100,000 gallons of contaminated wash water from the same operation.

It appears evident from this inspection that a significant amount of work remains on the clean-up of the West Lagoon and removal of the sludge. In addition, it appears by the obvious discoloration that the water accumulating in the excavated lagoon may also be significantly contaminated and may require additional disposal. A review of barge cleaning operations also casts some degree of doubt on the company claim that it will not generate a wastewater from such operations.

^{WEST LAGOON}
Three samples were obtained from the facility during this investigation. All samples were delivered to the R & D Lab at the West-Southwest Plant for analysis. Parameters to be analyzed were: General Chemistry, Cyanide, Phenol and Trace Metals.



R. Sustich, PCO I, Badge #121

Reviewed: 
R. Kaufmann, PCO II

RS/dms

It appears more information regarding barge cleaning operations is needed - see report @ this time the company submit to the MSD a complete explanation of the barge cleaning & wash operations. - J. Thomas

10-1-80

Hannah Marine, Inc.

Progress meeting on 90 day action notice

Carl Lambert - Hannah

Macmody - R. Sustich - Pcos PISD

Frank Bader - Real Estate Atty. PISD

Company presented generator copies of MSD manifest forms for (1) removal of contaminated soil from west pond area and (2) sludge removal from 168,000 tanks by Chem. Waste Mgmt. Co. Sustich stated sludge was very solid and had to be loosened by pumping in water washwater thru it to liquify it.

Matter of pumping down west pond was discussed. TSS free ammonia only parameter in violation of App. A grab sample. Company would prefer some additional evaporation while removing present piles of contaminated soil; MSD stressed importance of full cleanup and fill of west pond before winter put stop to activity.

Company was informed MSD requires schematic of barge cleaning operation; volume and path of wastewater; disposal. Real Estate atty. raised point that lease specifies cleaning only as adjunct of repair of barges, while it appears company is doing job shop cleaning. May need to renegotiate terms, like rental fees.

Company will return on 10-10-80 at 10⁰⁰am with Vice President Lydegraf and Kincaid, Operations Mgr.

Company will pump down pumps on east 1+M area and for have pump water analyzed for metals etc.

File 5/21/80
agreement

10/2/80

Hannak Marine:

Nick Lambert called to state they will start dewatering the west pond with the intention of filling in that portion from which muck has been removed and fill it with clay. Co. was instructed to notify MSD before filling so inspection can be made. Al Hidraites is notified.

TC.

cc: Deutch
Sustich
F. Gardner - R.E.
Law

10-16-80 Hannah Marne

- (1) One more week for Wiggbody moving mixed clay + sledge; manifest forms submitted to date.
- (2) Meeting with CID to set up dewatering of west pond. As dewatered, Council call MSD field to inspect before filling. Area can then be kept in attractive shape, ie weeds mowed etc.
- (3) Company is flattening damaged steel drums and disposing in Wiggbody loads of dirt. Good drums are being sold or returned to suppliers of kerosene or chemicals as new drums come in. Objective: no empty drums.
- (4) Sludge in 108,000 gal. tank is about $\frac{1}{2}$ removed. Will continue until tank is virtually dry. Oil is pumped from top for burning in boiler. Company is evaluating installing a mechanical separator ahead of the big tank. Its plan is to continually scavenge sludge to avoid the RCRA 90-day storage rule.
- (5) Drew will submit schematics by 11-1-80

SWW - T.C.

Subject of Investigation:

Hannah Marine Corporation

Rte. 83 & 171

Lemont, Illinois

F.I.D. #36260899400

Originated by:Main Office ☐Trt. Plant ☐Clean Streams ☐Other ☐Local Authority ☐Type of Complaint:Waterway ☐Sewer ☐Other ☒

Sludge removal

Supervisor Assigned:

R. Sustich

R. Kaufmann

Date of Investigation:

March 13, 1981

Mr. Dino Fabbre - Terminal Mgr.

PersonDateTime

Surveillance

Water Samplers:

None

Sample ☐Photographs ☒Additional Information Attached ☒

INVESTIGATION: The writer, accompanied by R. Kaufmann - PCO II, visited the subject company on March 13, 1981 to conduct a progress inspection with regard to clean-up operations of waste lagoons. Investigators contacted Mr. Dino Fabbre, Terminal Manager, upon arrival.

Inspection of the east lagoon area revealed that the clean-up in that area is essentially complete and that active operations are no longer required.

The west lagoon has now been dewatered and divided into two smaller areas, each of which will be underdrained with perforated PVC pipe. The company has cut a main drainage trench and is preparing to lay the pipe at this time. The company also plans to regrade the entire area after the pipe is installed.

Investigators will inspect the site after the pipe has been laid and again after surface regrading.

Photos: 3

No samples.



R. Sustich - PCO I - Badge #121

Reviewed: 

R. Kaufmann - PCO II

RS/hg

DATE OF INSPECTION: 8/27/81

FID #: 362 60 8994

COMPANY REPRESENTATIVE CONTACTED: Deno V. Fabbre

INFORMATION OBTAINED

1. Description of pretreatment system: Barge cleaning - oil separation
2. Types of sludge and process residues generated for disposal, including strippers and cleaners (specify constituents): Waste oils and waste caustic water from barge cleaning operations.
3. Volume of sludge and process residues generated (per day, per week, etc.): Approx. 25,000 gals. caustic waste water/mo.
Oil 40,000 gal. 3 to 4 mos.
4. Frequency of removal: Caustic - daily Oil - bi-weekly
5. Method of removal (specify drums, tank truck, etc.): Tank trucks (both)
6. Volume of sludge stored on Company's premises (specify type of container -- drums, tank, etc.): Oil tank - 60,000 gal. tank -
6 to 10,000 gal. on hand Caustic water - 1,000,000 gal. tank - 300,000 gal. on hand
7. Location of sludge storage: In yard (see sketch)
8. Name of sludge hauler: Pierce Oil (waste oil) Chemical Waste Mgt. (water) CID
9. Sludge disposal site: Pierce - Springfield
10. Does Company have an adequate supply of Manifest forms? Yes ☒ No ☐
11. General remarks: two former lagoons cleaned up - has sump pits to catch
remaining ground wastes.

Reviewed by: Roy Kuntzman

A. Swets
Inspection PCO I, D. Swets

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

INDUSTRIAL WASTE CONTROL PLANT SUMMARY

Name of Company Hannah Marine Corp. Date 8/27/81
 Address Kingery Rd. at Archer Ave., Lemont, IL 60439 No. of Employees 32
 Telephone NO. 242-3210
 Person Contacted Deno V. Fabbre Title Mgr. - Shipyard Oprs.
 Manufacturing Classification Barge cleaning & repair
 Waste Treatment System Categories PTP; oil separating
 Operational Time Hours Per Day 16 hr/5-6 day

Raw Material Used in Manufacturing Water from canal for washing barges

Basic Steps of Operations of Raw Materials for Production: Water intake -
heated in boiler, used to clean barges, oil separated, caustic water to large holding tank

Types of Waste Generated from All Operations: Waste oils, caustic wash water.

Waste Treated/How: Yes/oil separated

Scavengers: Dry Western Disposal Liquid/Other Pierce Oil/Chemical
Waste Management

Scavenger Dump Sites Chemical Waste Mgt - CID Pierce Oil, Springfield

E.P.A. Approved

Water Usage (Gal./Cu. Ft.) Monthly ~~None~~ Private Well/Nearly

No. of Meters None % of Use: Domestic Cooling

Processing/other Cooling Towers

Overflow/cleaning discharge to Treated systems/How

SD Plant Receiving Waste NONE VIA MSD Inter. Sewer Entering
 Plant NONE Nearest MSD Inter. Sewer/Discharged To: NONE

Local Sanitary System To: NONE

Sanitary Insp. MH's No Amount:

Sanitary Insp. MH's Needed & Where No

Storm Insp. MH's Yes Amount: 2 (PTP)

Storm Insp. MH's Needed & Where No

Water Course Receiving Discharge: CS & SC, ~~None~~ PP

Volatile Form Submitted: Yes Date: 8/27/81 Explosimeter Test: No

Print/Sketch of Grounds-Buildings-Sewers-Stations Submitted: Yes

Other Information Submitted:

Remarks: Sludge form completed.

Prepared by: D. J. Swets Date: 9/1/81

D. J. Swets, PCO I

SANITARY DISTRICT OF GREATER CHICAGO
INDUSTRIAL WASTE DIVISION

REPORT OF FLAMMABLE - VOLATILE - EXPLOSIVE - CORROSIVE MATERIALS

COMPANY NAME Hannah Marine Corp.
LOCATION OF FACILITY Kingery Rd. at Archer Ave., Lemont, IL 60439
PERSON TO CONTACT/EMERGENCY Deno V. Fabbre
PHONE # - DAY HOURS 242-3210 NIGHT 257-5456

<u>SPECIFIC NAME OF MATERIAL</u> (Please Print or Type)	<u>STORED IN</u> (Underground tank - 55 gal. drums in fireproof room, etc.)	<u>QUANTITY</u> MAX. Amount on hand
GASOLINE - No Lead	10,000 gal. Tank <i>Surface</i>	10,000 gal.
- Regular	8,000 gal. Tank <i>Surface</i>	8,000 gal.
FUEL OIL #6	8,000 gal. Tank <i>Surface</i>	8,000 gal.
"	(2) 10,000 underground (<i>2 way</i>)	20,000 gal.
LUBE OIL & HYDRAULIC	50 - 55 gal. drums	2,750 gal.
<i>No diesel fuel</i>		

TANKS - TRANSFER LINES, ETC., CHECKED FOR LEAKS: YES ☒ NO ☐

DATE OF TEST May 1981 . REMARKS: Checked annually

DRAINAGE SYSTEM OF UNDERGROUND FACILITIES OR FIREPROOF ROOM - TO WHICH
SYSTEM: SANITARY ☐ No ☐ STORM ☐

REPORT PREPARED BY: Deno Fabbre & D Swets DATE: 9-1-81

----- (to be filled out by MSDGC) -----

STORM SEWER & CREEK/RIVER - DISCHARGED TO: CS & SC, ~~44th St~~

LOCAL SANITARY SYSTEM DISCHARGED TO: N/A

MSDGC PLANT DISCHARGED TO: N/A VIA INTER. SEWER N/A

REMARKS: _____

055

9/1/81

Please return to: MSDGC, Industrial Waste Division
100 East Erie Street
Chicago, Illinois 60611

D. Swets, PCO I

CONCILIATION AGREEMENT

This AGREEMENT, entered into by and between the METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO, a Municipal Corporation, organized and existing under and by virtue of the laws of the State of Illinois, hereinafter called the "DISTRICT" and

VIOLATION	82-107
NOTICE#	1
HEARING	1
DATE	3/22/82

Hannah Marine Corp., Kingery Rd. at Archer Ave., Lemont, Ill. 60439
FID: 362608994

hereinafter called the "COMPANY":


MSD Treatment Plant	Calumet	MSD Waterway
Alleged Violations	Art. IV Sec. 3 -	Sludge Reporting

WHEREAS it has been alleged that the COMPANY has been and/or is presently in violation of the pollution laws contained in the Sewage and Waste Control Ordinance; WHEREAS parties agree to conciliate; NOW, THEREFORE, it is agreed that the COMPANY will attain compliance as follows:

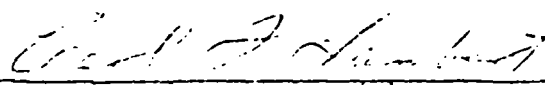
Co. was unaware that the waste oils required manifesting as they had a market value and were being sold rather than disposed. Co. agrees to manifest these materials.

Co. estimates they generate 60,000 gal. of oil every 4 months. This oil is removed every 3 months. This is picked up by Pierce Oil and taken to their plant in Springfield, Ill. for use as fuel. Co. states they are in compliance with the District ordinance.

COMPLIANCE DATE: 3/22/82


Hearing Officer (s)

E. Field


Company Representative (s)

Carl Lambert, Mgr.-Safety & Compliance
Deno Fabbre, Mgr.-Shipyard Operator

Subject of Investigation:

Hannah Marine Corp.
Rts. 82 & 171
Lemont, Illinois
FID #362 780 828

Date of Investigation:

June 25, 1982

Originated by:

Main Office ☒
Trt. Plant ☐ Clean Streams ☐
Other ☐ Local Authority ☐

Type of Complaint:

Waterway ☒ Sewer ☐ Other ☐

PersonDateTime

J. Tomaras	6/18/82	
E. Field	4/23/82	

Supervisor Assigned:

James E. Figlewicz

Water Samplers:

Gieseeman, Sheridan, Lane

Sample ☒

Photographs ☐

Additional Information Attached ☐

INVESTIGATION:

The writer, accompanied by D. Swets, PCO-I, visited the facility on June 25, 1982, to conduct an inspection with regard to new installation of old storage tanks on the property. Investigators met with Mr. Vaden Robertson, Yard Superintendent.

Inspection confirmed addition of three 20,000 gallon storage tanks to company's property. The tanks were purchased from Material Service (yard number unknown). These tanks have been cleaned and contain no residues. At present, company has no plans to install these tanks in the foreseeable future due to lack of finances. The tanks will probably be used to store wash water generated from plant operations. Company will install regulation pads and clay berms before the tanks are put into operation. Company is in the process of obtaining building and installation permits and will inform the MSD before installation of the tanks occurs.

In regard to Violation #82-121, a compliance inspection was conducted of the company's private treatment plant. Compliance date was May 21, 1982.

Inspection revealed that the chlorinator has been moved to the north side of Station #1B. A check of the effluent showed the pH to be between 8-9, which bleached out rapidly; a strong chlorine odor; clear, slightly yellow, slight sediment;

June 25, 1982

Hannah Marine Corp.
Rts. 83 and 171
Lemont, Illinois

and no flow was observed. Mr. Robertson stated that he would have his electrician check out the chlorinator and cut back on the proportion to be added.

Compliance sampling followed on July 15, 21 and 28. A total of nine (9) samples was taken. Samples were delivered to the WSW R & D Laboratory for the following analysis: General Chemistry and fecal coliform. A two (2) sample composite was conducted on the General Chemistry samples. Grabs were taken for fecal coliform. Surveillance will continue with normal monthly private treatment plant sampling at Station #1B.

Reviewed: Roy Kaufman

JEF/dms

James E. Figlewicz
James E. Figlewicz, PCO-1, Badge #150

TO

Roy Kaufmann

FROM

J. Tormar

SUBJECT

Hannah Maure

DATE

6/18/82

MESSAGE

Subpt. co. appears to be installing old storage tanks on property. Suggest insp. be made to determine viability of tank storage system. What type of prod. if any? Does clay beam? What are tanks to be used for? Did company contact MSD about new installation?

SIGNED

J. Tormar

REPLY

JE Eglewicz 6-25-82 report attached page 8/7

SIGNED

DATE

/ /

Rediform 45 472

SEND PARTS 1 AND 3 WITH CARBON INTACT.
PART 3 WILL BE RETURNED WITH REPLY.

FORM 30-101-10-10

TR 5
Non-Reg. listed -
W. Hazardous Cond

EPA 04380204 POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 1 - SITE INFORMATION AND ASSESSMENT		I. IDENTIFICATION	
		01 STATE	02 SITE NUMBER
		IL	D069496249
II. SITE NAME AND LOCATION			
01 SITE NAME (Legal, common, or descriptive name of site)		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER	
HANNAH MARINE CORP.		HINGERY ROAD AT ARCHER AVE	
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY
LEMONT	IL	60439	DUPAGE
07 COUNTY CODE	08 COUNTY DIST		
043	4		
09 COORDINATES LATITUDE		LONGITUDE	
41.4122.0		87° 56' 00.0	
		SAG BRIDGE	
10 DIRECTIONS TO SITE (Starting from nearest public road)			
TAKE ARCHER AVENUE TO HINGERY ROAD SITE IS LOCATED AT ARCHER AND HINGERY (ON CANAL)			
III. RESPONSIBLE PARTIES			
01 OWNER (if known)		02 STREET (Business, mailing, residential)	
HANNAH MARINE		361 F. MONTAGUE RD	
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
BURR RIDGE	IL	60521	(312) 2423210
07 OPERATOR (if known and different from owner)		08 STREET (Business, mailing, residential)	
HANNAH MARINE		HINGERY ROAD	
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
LEMONT	IL	60439	(312) 2423210
13 TYPE OF OWNERSHIP (Check one)			
<input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN			
14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)			
<input checked="" type="checkbox"/> A. RCRA 3001 DATE RECEIVED <u>UNKN</u> <input type="checkbox"/> B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED <u>UNKN</u> <input checked="" type="checkbox"/> C. NONE			
IV. CHARACTERIZATION OF POTENTIAL HAZARD			
01 ON SITE INSPECTION		02 BY (Check all that apply)	
<input checked="" type="checkbox"/> YES DATE <u>4.19.82</u> <input type="checkbox"/> NO		<input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input checked="" type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER:	
CONTRACTOR NAME(S):			
02 SITE STATUS (Check one)		03 YEARS OF OPERATION	
<input checked="" type="checkbox"/> A. ACTIVE <input type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN		BEGINNING YEAR ENDING YEAR <input checked="" type="checkbox"/> UNKNOWN	
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED			
VOLATILE (SOLVENTS) (BASES)			
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION			
ENVIRONMENT (SURFACE WATER) POTENTIAL RUNOFF OF (SOIL) CONTAMINANTS TO CANAL. POTENTIAL FOR SOIL CONTAMINATION FROM TWO GULF STATE LPGCHS			
V. PRIORITY ASSESSMENT			
01 PRIORITY FOR INSPECTION (Check one if high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)			
<input type="checkbox"/> A. HIGH <input checked="" type="checkbox"/> B. MEDIUM <input type="checkbox"/> C. LOW <input type="checkbox"/> D. NONE			
VI. INFORMATION AVAILABLE FROM			
01 CONTACT		02 OF (Agency/ Organization)	
Jim Wiggins		IEPA - MAYWOOD OFFICE	
03 TELEPHONE NUMBER			
(312) 3459780			
04 PERSON RESPONSIBLE FOR ASSESSMENT		05 AGENCY	
Jim Wiggins		IEPA	
06 ORGANIZATION		07 TELEPHONE NUMBER	
		(312) 3459780	
08 DATE			
3.21.84			

EPA FORM 2070-12 (7-81)



II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A GROUNDWATER CONTAMINATION02 ☐ OBSERVED (DATE _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED _____

04 NARRATIVE DESCRIPTION

01 ☒ B SURFACE WATER CONTAMINATION02 ☐ OBSERVED (DATE _____)☒ POTENTIAL☐ ALLEGED03 POPULATION POTENTIALLY AFFECTED 1,000

04 NARRATIVE DESCRIPTION

HAWAIIAN MARINE HAS HAD TWO ON SITE LAGOONS
FOR RETAINING RINSEATE AND SLUDGE FROM ITS CLEANING
OPERATION - CAUSTIC RINSEWATER W/ ORGANIC CONTAMINANTS

01 ☐ C CONTAMINATION OF AIR02 ☐ OBSERVED (DATE _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED _____

04 NARRATIVE DESCRIPTION

01 ☐ D FIRE EXPLOSIVE CONDITIONS02 ☐ OBSERVED (DATE _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED _____

04 NARRATIVE DESCRIPTION

01 ☐ E DIRECT CONTACT02 ☐ OBSERVED (DATE _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED _____

04 NARRATIVE DESCRIPTION

01 ☒ F CONTAMINATION OF SOIL02 ☐ OBSERVED (DATE _____)☒ POTENTIAL☐ ALLEGED03 AREA POTENTIALLY AFFECTED 1

04 NARRATIVE DESCRIPTION

(Acres)

POTENTIAL FOR SOIL CONTAMINATION FROM
PREVIOUS OPERATION OF TWO LAGOONS

01 ☐ G DRINKING WATER CONTAMINATION02 ☐ OBSERVED (DATE _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED _____

04 NARRATIVE DESCRIPTION

01 ☐ H WORKER EXPOSURE INJURY02 ☐ OBSERVED (DATE _____)☐ POTENTIAL☐ ALLEGED

03 WORKERS POTENTIALLY AFFECTED _____

04 NARRATIVE DESCRIPTION

01 ☐ I POPULATION EXPOSURE INJURY02 ☐ OBSERVED (DATE _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED _____

04 NARRATIVE DESCRIPTION

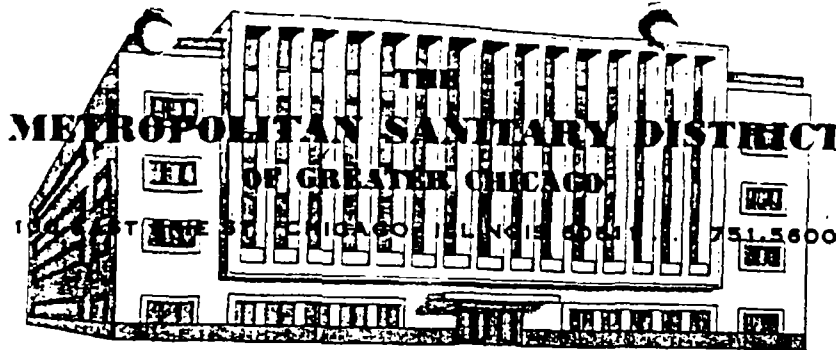
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4. Check the
and
PRESIDENT



Cecil Lue-Hing

Director

Research & Development



BOARD OF COMMISSIONERS

JOANNE H. ALTER
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AURELIA PUCINSKI
RICHARD J. TROY
LOUIS A. VIVERITO

NOTICE OF VIOLATION

THE METROPOLITAN SANITARY
DISTRICT OF GREATER CHICAGO)

vs.)

HANNAH MARINE)

VIOLATION NO. 86-074C

WATERWAY

Mr. David E. Updegraff
TO: ~~Manager~~ ~~Exec. Vice Pres.~~
~~Resource Planning~~
361 Frontage Road
Suite 101
Burr Ridge, Illinois 60521

Facility: Route 171 and Route 83
Lemont, Illinois 60439

Investigation has revealed that you have violated Appendix A of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago and the applicable Illinois law pertaining to pollution. Your violation consists of: discharging an effluent with excessive concentrations of suspended solids (3088 mg/l), iron (18.3 mg/l) and with high pH value (9.2) into the Chicago Sanitary and Ship Canal, based on a grab sample taken at 11:45 a.m. on January 23, 1986.

An owner or an officer of the respondent, authorized to legally bind the respondent, is directed to appear at the Industrial Waste Division, Enforcement Section, Third Floor, at 111 East Erie Street, Chicago, Illinois, on March 24, 1986 at 2:00 p.m. for a conciliation meeting, to discuss and attempt to resolve the violation and to submit, at that time, a plan and schedule for compliance. Direct phone inquiries should be made to Joseph Wadz at 751-3047.

THESE PROCEEDINGS ARE TECHNICAL AND NON-ADVERSARY IN NATURE. ANYONE APPEARING PURSUANT HERETO MAY APPEAR WITH LEGAL AND/OR TECHNICAL COUNSEL. YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH LEGAL ACTION AND SANCTIONS AS ARE PROVIDED BY LAW.

Witnessed: March 10, 1986
The Metropolitan Sanitary District
of Greater Chicago
Frank E. Dalton, General Superintendent

PREPARED BY:

Jerome Tobias
Chief Enforcement Officer

CLH:JW:lg/
CLH:RL:AS:JT:JW:lg

BY:

Cecil Lue-Hing, D.Sc., P.E.
Director
Research and Development

063

CONCILIATION AGREEMENT

This AGREEMENT, entered into by and between the METROPOLITAN
SANITARY DISTRICT OF GREATER CHICAGO, a Municipal Corporation,
organized and existing under and by virtue of the laws of the
State of Illinois, hereinafter called the "DISTRICT" and

VIOLATION	<u>86-074C</u>
NOTICE#	<u>1</u>
HEARING	<u>1</u>
DATE	<u>3/24/86</u>

Hannah Marine, Rt. 171 & 83, Lemont, IL
hereinafter called the "COMPANY":

MSD Treatment Plant MSD Waterway Chicago Sanitary & Ship Canal
Alleged Violations Suspended solids, iron, high pH

WHEREAS it has been alleged that the COMPANY has been and/or is presently in violation of the
pollution laws contained in the Sewage and Waste Control Ordinance; WHEREAS parties agree to
conciliate; NOW, THEREFORE, it is agreed that the COMPANY will attain compliance as follows:

Company reports that they had recently cleared out their wash-
room sewers, suspects high readings due to that, although could
not explain high pH.

Company states that, to the best of their knowledge, no barge
cleaning wastewaters are discharged, but are either recycled or
hauled away.

Company submitted analysis of recent grab samples, 5 most recent
in compliance.

Company will return on 4/22/86 at 10:00 a.m. with complete plant
layout/sewer ~~drawing~~ drawing, showing location of barge cleaning,
treatment and septic systems, verifying what discharges to Sta. 1B.
Company will also investigate source of high pH.

COMPLIANCE DATE: _____

J. Wadz
Hearing Officer (s)

D. Updegraff
Company Representative (s)
D. Updegraff, Exec. Vice Pres.

TO: DEU

FROM: JCB

DATE: March 31, 1986

SUBJ: SHIPYARD SEWAGE TREATMENT

The 3" sewer lines come from the mens and ladies washrooms and the 6" sewer line comes from the shop washroom. All of these lines connect to the sewer macerator which in turn flows into the septic tank field, from there to the hypochlorinator, where the grab samples are taken, and then to the Chicago Sanitary and Ship Canal.

All of these lines are segregated lines and used only for the sewer system. At no time does Hannah Marine Corporation discharge barge cleaning waste water into the sewer system or the waterway. All barge waste water is removed from the premises via licensed waste haulers and is properly manifested.

The high ph reading that showed up in the January, 1986 report was due to the malfunction of our shop sewer which was plugged and in turn, trapped our employee hand soap detergent so that when our sewer was rodded out, this released the soap detergent at one time and in turn gave us the high ph reading.

For as you can well see by the analysis that we submitted of our recent grab samples, we were in compliance, which shows that our chlorination system is in good working order.

Enclosed you will find two schematic drawings of the sewage treatment system.

JCB/da

Encl

CONCILIATION AGREEMENT

This AGREEMENT, entered into by and between the METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO, a Municipal Corporation, organized and existing under and by virtue of the laws of the State of Illinois, hereinafter called the "DISTRICT" and

VIOLATION	86-074C
NOTICE#	1
HEARING	2
DATE	4-22-86

Hannah Marine, Rt. 171 & 83, Lemont, IL.
hereinafter called the "COMPANY":

MSD Treatment Plant MSD Waterway Chicago Sanitary & Ship Canal
Alleged Violations Suspended solids, iron, high pH

WHEREAS it has been alleged that the COMPANY has been and/or is presently in violation of the pollution laws contained in the Sewage and Waste Control Ordinance; WHEREAS parties agree to conciliate; NOW, THEREFORE, it is agreed that the COMPANY will attain compliance as follows:

Company furnished requested drawings, states PTP discharge is strictly sanitary wastes from office and shop washroom and shower. All barge cleaning wastewater is hauled away and manifested.

Regarding the high pH, company believes was caused by a release of soap detergent during the recent sewer unplugging, although a company sample taken after the unplugging and before MSD's sample showed normal pH. Subsequent Company's samples indicate compliance.

COMPLIANCE DATE: 4-22-86

J. Wadz
Hearing Officer (s)

J. Wadz

ib

D. Updegraff
Company Representative (s)

D. Updegraff, Exec. Vice President

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

DEPARTMENT: Research & Development

DATE: 2/23/87

TO: James T. Dencek, PCO IV

FROM: James E. Figlewicz, PCO I

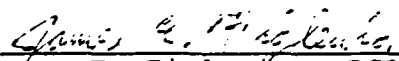
SUBJECT: HANNAH MARINE
Routes 83 & 171
Lemont, Illinois

The subject facility was sampled on February 11, 18, 19, and 20, 1987. This was in regards to Violation #86-074C, for Suspended Solids, Iron, and high pH, with a compliance date of April 22, 1986. Also Violation #86-416C for BOD with no compliance date on file.

A low pH of 3 was observed on February 11. Mr. George Vosava, of this facility, stated on February 18, that there had been an equipment breakdown on February 11. This breakdown had caused the low pH condition. Repairs had been made immediately, which corrected the pH problem.

Grab samples from Station #1B, at this Private Treatment Plant, preserved and delivered to the WSW Lab. Parameters analyzed for were General Chemistry, Cyanide, Phenol, FOG, and Trace Metals.

Total Samples: 20


James E. Figlewicz, PCO I

Reviewed: _____

P03

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

SENT TO

Hannah Marine
STREET AND NO
361 Frontage Road
PO, STATE AND ZIP CODE
Burr Ridge, IL 60521

POSTAGE

CERTIFIED FEE

SPECIAL DELIVERY
RESTRICTED DELIVERY

RETURN RECEIPT SERVICE

OPTIONAL SERVICES

CONSULT POSTMASTER FOR FEES

SHOW TO WHOM AND DATE DELIVERED

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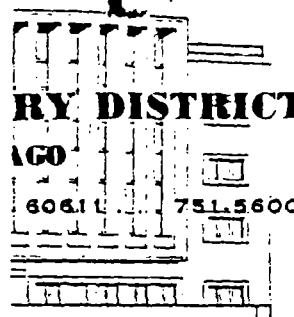
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BOARD OF COMMISSIONERS
JOANNE H. ALTER
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NICHOLAS J. MELAS
AURELIA PUCINSKI
NANCY DREW SHEEHAN
RICHARD J. TROY

PS Form 3800, Apr. 1976

THE METROPOLITAN SANITARY)
DISTRICT OF GREATER CHICAGO)
vs.)
HANNAH MARINE CORPORATION)

VIOLATION NO. 87-112C

WATERWAY

THIRD VIOLATION

TO: Mr. David E. Updegraff
Executive Vice President
361 Frontage Road
Suite 101
Burr Ridge, Illinois 60521

Facility: Route 171 and Route 83
Lemont, Illinois 60439

Investigation has revealed that you have violated Appendix A of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago and the applicable Illinois law pertaining to pollution. Your violation consists of: discharging an effluent with high pH (9.7) and with an excessive concentration of suspended solids (964 mg/L) into the Chicago Sanitary and Ship Canal, based on a grab sample taken at 10:05 a.m. on February 11, 1987.

An owner or an officer of the respondent, authorized to legally bind the respondent, is directed to appear at the Industrial Waste Division, Enforcement Section, Third Floor, at 111 East Erie Street, Chicago, Illinois, on April 9, 1987 at 2:00 p.m. for a conciliation meeting, to discuss and attempt to resolve the violation and to submit, at that time, a plan and schedule for compliance. Direct phone inquiries should be made to Rion Klawinski at 751-3047.

THESE PROCEEDINGS ARE TECHNICAL AND NON-ADVERSARY IN NATURE. ANYONE APPEARING PURSUANT HERETO MAY APPEAR WITH LEGAL AND/OR TECHNICAL COUNSEL. YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH LEGAL ACTION AND SANCTIONS AS ARE PROVIDED BY LAW.

Witnessed: March 20, 1987
The Metropolitan Sanitary District
of Greater Chicago
Frank E. Dalton, General Superintendent

PREPARED BY:

Jerome Tobias
Jerome Tobias
Chief Enforcement Officer

CLH:JW:ib
CLH:RL:APS:JT:JW:ib

BY:

CLH/RL
Cecil Lue-Hing, D.Sc., P.E.
Director
Research and Development

068

INTERVIEW NOTES: JOHN DOE
4/2/87
PREVIOUS EMPLOYEE OF HANNAH MARINE
LEMONT, ILLINOIS

April 2, 1987
1400 Hours

Confidential Source

Barge Cleaning Operations

1. Bring Barge in
2. Decide if would save product - resold
3. If not, proceed directly to cleaning as follows:
 - High pressure wash, sometimes with caustic (NaOH).
 - Hang two Butterworth machines (spinners) inside, 25-45 minutes per compartment.
 - Are either pumping liquid out or operating with vacuum.
 - 3-10 compartments per barge, 12,000 gallons waste water per compartment generated if relatively clean.
 - Then ventillate and inspect.
 - Solids were drummed and shipped to a landfill - infrequent; asphalt barge.
 - Mid-70s took to Atlantic Richfield and had it run through waste separation system.
 - Pre RCRA waste water shipped to ARCO Refinery (East Chicago).

Clientelle

Hannah cleaned their own barges, plus outside barge lines; 40% outside companies to 74/75, increasing up to 65 or 70%.

Barge contents

Hannah Barges:

1. Fuel oils - all numbers
2. asphalt
3. gasoline
4. NaOH
5. Benzene
6. Toluene from gas breakdown?
7. Alkalids (soap stock) (alkylbenzene)
8. Fertilizer pollutions

Outside Barges:

Anything on the river -- were no other barge cleaning ops until Petrochem in the late 70's.

Resale of Good Product

If using a 10⁶ gallon pump, have about 500-1000 gallons good product left in the barge.
Typical customers - oil recyclers

Barge lines cleaned for

Great Lakes region.

Were only operation until late 70's (Petrochem (77)) and are again, in this area.

Other operations

Welded.

Sand blasted and painted.

Site History

In business since 1918.

Intimated purchase of Inland Waterways in 1948 as explanation of Incorporation Documents.

Though early MSD sampling ('71 or so) was only for sanitary waste treatment system, a steam boiler has been on site since initial operations.

Though Hannah presumably treated sanitary wastes in their early years, prior to '70 was a straight pipe discharge. This was a separate system from the other Cavitat system.

Bonafide disposal lagoons and discharges to Canal occurred pre-70. What EPA required removal action for in '78/'79 was area where waste water was stored prior to transport for off-site disposal.

John Doe Association

Worked for Hannah Marine from 1970-78/79.

Responsible for maintaining the barges mechanically

1. 1 1/2 years as purchasing agent (parts and supplies) and barge superintendant.

2. Manager of engineering (maintenance).

Was most involved with cleaning in '73/'74

Ownership of Barge operations

Donald, President, is father of Daryl Hannah.

Donald's father began operations in 1918.

previously owned the largest trucking operation in IL.

Died a few years ago.

Dumping Incidents

Seemed to be aware of Willow Spring Road/Rte '83 incident.

Implied this was not an unusual occurrence.

INTERVIEW NOTES: AL GIDREITAS AND RICH SUSTRICH

4/14/87

EMPLOYEES OF MSDGC
PRPS SEARCH - HANNAH MARINE
LEMONT, ILLINOIS

April 14, 1987

Al Gidreitas Pollution Control Officer -3
 Industrial Waste Division
 MSDGC

Rich Sustrich Pollution Control Officer - 2
 Industrial Waste Division
 MSDGC

AG has been involved with site on the management level.
RS was active at the site during the IEPA removal reaction.

Lagoons

Were two ponds and a small, deep pit used for disposal of contaminated barge cleaning waters.
Ponds were used for disposal/evaporation of volatiles, not as a holding area.
Large pond held approximately 150,000 gallons - high in xylenes; 50,000 in other.
Disposed of approximately 100,000 gallons per annum in the ponds.
Could see run off from smaller pond to the I & M Canal.
Suspect that there are 2 or 3 previous disposal layers below what the IEPA removed.
Could possibly be an old quarry.
At 15 feet down, are large smooth boulders.
Both ponds had a high pH.

Site Initiation/Removal Action

Private citizen observed lagoons from the bridge on Rte. 83.
Noted run off to the I & M Canal.
Hannah Marine paid approximately \$300,000 for removal action.
Sumps installed at approximately 15 feet. One extracted oil identified as the same oil in I & M Canal.
Monitoring wells installed at 12 feet.
Sludge remained in west pond after removal action with 40% LEL (10,000 ft³).
Removed one load of liquids - Hannah Marine claimed 95,000 gallons evaporated.

Waste Streams Generated/Storage Facilities

25,000 gallons caustic waste/month
40,000 gallons oil/3-4 months
60,000 gallon storage tank
1,000,000 gallon caustic water tank/separator.
Recycled cleaning water in separator/oil skimmer.
Levels of toluene, etc. too high to be breakdown from gasoline.

PTP (Private Treatment Plant)

Cavitat system

Small activated sludge treatment plant
Underground storage tanks with aerator
Chlorinator that doesn't work very well

MSD samples to test PTP effluent, only

Thinks the boiler house condensate may also enter the effluent
would require a leak for the condensate to be contaminated

Recent sampling errors - done by Special Services (of Industrial Waste Division).
PTP sampling is low priority.

Junk Yard

Bob Bily - owner/operator.
Has history of oil problems - claims it washes down from the highway (83).
Had an oil fire last year.

CS & SC

Last summer, after extensive rains (high water table),
100,000 gallons of old, dirty oil showed up in I & M.

Midnight Dumping Incident

Nov. 25, 1979
Willow Spring Rd. and 83/Des Plaines River
Pool sample at river and at Hannah matched; Truck sample did not.
Handled by Willow Springs Police Dept.

Scope of Operations

Lemont Ship Building and Repair did a limited amount of barge cleaning.

Located downstream from Hannah.

Hauled for Koppers Company on Laramie St. - orthoxylene; toluene.

Other suggested companies: Koch Oil (formerly Gustafson Oil)

~~Apex on Kedgie~~ - Forest View

TriCentral Marine - Lemont

Union Carbide

GATX - warehouse for organics, oils

Dravo Meckland

All the big barge lines - had to go through there.

APPENDIX B
104(e) RESPONSE
HANNAH MARINE
LEMONT, ILLINOIS

APPENDIX B

Bibliography of 104(e) Response Documents Source: IEPA

<u>Document Nos.</u>	<u>Document Description</u>
001-012	Hannah Marine Corporation's response to U.S. EPA's requests (4/3/87)
017-104	Response No. 3 and 5: Chemical compositions of materials handled at site. (4/3/87)
114-130	Response No. 4: Volumes and dates of disposal (4/3/87)
131-172	Response No. 7: Description of barge cleaning procedures (4/3/87)
173-189	Response No. 9: List of Pollution Control Permits (4/3/87)
190-213	Response No. 10: Disposal Service receipts and logs, analyses, invoices (11/79 - 4/80)
214-227	Response No. 11: Liability insurance policies (7/14/82)
228-231	Response from Hannah regarding EPA's request for more information (5/14/87)
232-240	IEPA Waste Stream Permits: Hannah Marine Corp., generator (12/81 -17/86)

COPY

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A LAW PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

525 WEST MONROE STREET • SUITE 1600

CHICAGO, ILLINOIS 60606-3693

TELEPHONE (312) 902-5200

TELECOPIER (312) 902-1061

TELEX 298264 ATLAU UR

WRITER'S DIRECT DIAL NUMBER

(312) 902-5332

180 WEST PARK AVENUE

ELMHURST, ILLINOIS 60126-3307

TELEPHONE (312) 530-7070

223 EAST MONROE STREET

SPRINGFIELD, ILLINOIS 62701-1126

TELEPHONE (217) 753-4490

April 3, 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Susan Swales (5HE-12)
Waste Management Division
U.S. EPA - Region V
230 South Dearborn Street
Chicago, IL 60604

Re: Hannah Marine Corporation
Lemont, Illinois

Dear Ms. Swales:

Hannah Marine Corporation ("Hannah") hereby responds to U.S. EPA's requests for information of January 26, 1987. Hannah has made good faith efforts to respond and has spent numerous hours in doing so. However, since the relevant time period spans about thirty-six years, not all of the information requested is available.

Hannah's responses to inquiries calling for written answers are set forth below. Documents have been forwarded to you in response to inquiries calling for a production of documents.

Request No. 1:

1. State the name and address of the owner(s) of the land on which Hannah Marine is situated. Include any past owners/operators of the facility during the operating period.

Response No. 1:

1. The name and address of the owner of the land on which Hannah Marine is situated is as follows:

Metropolitan Sanitary District
of Greater Chicago
100 East Erie Street
Chicago, Illinois

There have been no other owners/operators since 1951.

Request No. 2:

2. Provide copies of all shipping documents, or other business documents including receipts, relating to the transportation, storage, and/or disposal of waste materials at the above referenced site.

Response No. 2:

2. Copies of all documents that may be responsive to this request have been sent to U.S. EPA under separate cover.

Request No. 3:

3. Provide the generic, common or trade name and the chemical composition and character (i.e. liquid, solid, sludge) of the materials transported to, stored, and/or disposed of at the above referenced site.

Response No. 3:

3. All information that may be responsive to this request is contained in material safety data sheets, an analysis reported by Chem-Clear (dated 6/3/82), a "Special Waste Analysis Report" by Chemical Waste Management, Inc. (dated 11/20/81), two Illinois Environmental Protection Agency ("IEPA") Special Waste Disposal Applications (dated 1/29/81 and 2/26/82, respectively),

descriptions of certain cleaning procedures (see Response No. 7), and material submitted in Response No. 10, copies of which have been sent to U.S. EPA under separate cover.

Request No. 4:

4. For each waste material identified above, please give the total volume in gallons for liquids and in cubic yards for solids, for which you disposed of and list the dates when disposal occurred.

Response No. 4:

4. All information that may be responsive to this request is contained in the IEPA Generator Annual Hazardous Waste Reports for the years 1982 through and including 1986, copies of which have been sent to U.S. EPA under separate cover.

Request No. 5:

5. Provide copies of all records, including analytical results, and material safety sheets, which indicate the chemical composition and/or chemical character of the waste material(s) transported to, stored, or disposed of at the above referenced site.

Response No. 5:

5. All information that may be responsive to this request is contained in material safety data sheets, an analysis reported by Chem-Clear (dated 6/3/82), a "Special Waste Analysis Report" by Chemical Waste Management, Inc. (dated 11/20/81), two Illinois Environmental Protection Agency ("IEPA") Special Waste Disposal Applications (dated 1/29/81 and 2/26/82, respectively),

descriptions of certain cleaning procedures (see Response No. 7), and material submitted in Response No. 10, copies of which have been sent to U.S. EPA under separate cover.

Request No. 6:

6. Provide a detailed description of daily disposal practices at the above referenced site.

Response No. 6:

6. The response to Request No. 6 has been combined with the response to Request No. 7, below.

Request No. 7:

7. Provide a description of the cleaning procedures of the barges at the above referenced site.

Response Nos. 6 and 7:

6 and 7. Hannah services barges that transport a variety of products in the Chicago area. Often, after initial unloading, the barges may still contain several hundred gallons of virgin product. Hannah removes this remaining product, if any, and/or may clean the barge.

The remaining product is removed from the barge by Hannah's vacuum system. Each respective material is placed in a separate tank and is sold. (On rare occasions, some of the product cannot be sold and is properly disposed of off-site.)

Hannah has special equipment and skills necessary to clean barges, although barges are not necessarily cleaned each time a product is removed from a barge. Details of the cleaning process vary according to the product contained in the barge prior to cleaning. However, common elements of the process include acquiring information about the construction of the barge and the material it contained prior to cleaning, thorough inspection of the barge, steam and/or hot water application prior to human entry, and hand cleaning and additional hot water application if necessary. Detergents may also be used in the cleaning procedure.

Hannah has written descriptions or cleaning procedures for the following materials: gasoline, tallow and bean oils, methyl ethyl ketone, molasses, styrene monomer, ethylene glycol, calcium chloride, and caustic soda solution. They have been sent to U.S. EPA under separate cover.

Varying amounts of wastewater are usually generated during the procedure. The wastewater is removed from the particular compartment by a vacuum system and is transferred to a holding tank. The wastes are then removed from the tank for off-site disposal (or occasionally for sale, if the material is suitable) within about thirty days.

Request No. 8:

8. Provide a customer/user list for the above referenced site. The list is to include available current addresses for each customer. Provide a list of all transporters using the site.

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Response No. 8:

The customer/user list is as follows:

American Commercial Barge Line 1701 E. Market Street Jeffersonville, IN 47130	Canal Barge Company P.O. Box 198 Channahon, IL 60410
Apex Oil Company 4801 South Harlem Forest View, IL 60402	Cargo Carriers, Inc. Box 9300 Minneapolis, MN 55440
Apex Towing Company 11301 Olive Street Road St. Louis, MO 63141	Chotin Transportation P.O. Box 3018 Baton Rouge, LA 70821
Best Foods Units of CPC 2816 S. Kilbourn Avenue Chicago, IL 60623	Conti Carriers Foot of Davis & Ferry Road E. Carondelet, IL 62240
Bigane Vessel Fueling Company 3583 Archer Avenue Chicago, IL 60609	Diamond Shamrock Corp. 1149 Ellsworth Drive P.O. Box 1000 Pasadena, TX 77501
Borg-Warner Chemicals P.O. Box 658 Ottawa, IL 61350	Dixie Carriers, Inc. 2266 Peters Road Harvey, LA 70058
Brent Towing Co., Inc. Lake Ferguson Industrial Harbor Greenville, MS 38701	Dow Chemical Company P.O. Box 500 River Road Plaquemine, LA 70764
Dow Chemical-Texas Division Building A-2813 Freeport, TX 77541	Koch Carbon P.O. Box 2219 Wichita, KS 67201
Dravo Mechling Corp. P.O. Box 52189 400 Poydras Building New Orleans, LA 70152-2189	LCP Chemicals P.O. Box J Monsville, WV 26041
Exxon Shipping Company 3901 Scenic Highway Baton Rouge, LA 70821	Material Service Company P.O. Box 188 Lockport, IL 60441

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Federal Barge Lines
Midland Affiliated Cos.
P.O. Box 1460
Cincinnati, OH 45201

Goodrich, B.F.
P.O. Box 527
Calvert City, KY 42029

Ingram Barge Company
4304 Harding Road
Nashville, TN 37202

K.A. Steel Chemicals, Inc.
1001 Main Street
Lemont, IL 60439

Occidental Chemical Corp.
Hooker Chemical Center
360 Rainbow Boulevard, So.
Niagra Falls, NY 14302

Ohio River Company
P.O. Box 1460
580 Building
Cincinnati, OH 45202

Ole Man River Towing
P.O. Box 186
Vicksburg, MS 39180

PPG Industries
P.O. Box 1000
Lake Charles, LA 70602

Riverway Barge Company
7703 Normandale Rd. Room 110
Minneapolis, MN 55435

Riverway Barge Company
111 West Port Plaza, Suite 716
St. Louis, MO 63141

SC&NO Barge Line, Inc.
12680 Olive Street Road
St. Louis, MO 63141

Midwest Tankerman
P.O. Box 323
Lockport, IL 60441

Mobil Oil Company
10123 Corporate Square Dr.
St. Louis, MO 63132

National Marine Service, Inc.
1750 Brentwood Boulevard
St. Louis, MO 63144

Northern Petrochemical
Box 459
Morris, IL 60450

Service Welding
P.O. Box 352
Lemont, IL 60439

Smith, Arthur Co.
8919 Interchange Drive
Houston, TX 77054

Stolt-Nielsen Inc.
8 South Shore Drive
P.O. Box 2300
Greenwich, CT 06836

Union Carbide Corporation
P.O. Box 8008
Charleston, WV 25303

United Chemical Products
1036 N. Capital Avenue
Indianapolis, IN 46204

Union Oil of California
P.O. Box 7610
Schaumburg, IL 60196

Valley Barge Line
529 N. Chicago Street
Joliet, IL 60432

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The transporter list is as follows:

Mr. Frank, Inc. 201 W. 155th Street South Holland, IL 60473	Custom Blended Oils P.O. Box 41 Peotone, IL 60468
Reliable Liquid Control Corp. 7700 W. 88th Street Bridgeview, IL 60455	B & W Chemical 2250 W. 47th Avenue Gary, IN 46408
Viking Associates, Inc. 1530 N. Broadway Joliet, IL 60435	Leader Industries 2000 Bombay Road, Suite 14 Portage, IN 46368
Chicago Tank Cleaners Route 6 Box 256 Lockport, IL 60441	Denver Nettles 1148 Denver Drive Carpentersville, IL
Liquid Dynamics 655 E. 114th Street Chicag, IL 60628	All American Tank Cleaners P.O. Box 129 Willow Springs, IL 60480
American Energy 2000 Dombey Road Portage, IN 46368	

Request No. 9:

9. Provide a list of all pollution control permits obtained for the above referenced site (NPDES, RCRA).

Response No. 9:

IEPA has issued the following waste stream permits for Hannah:

- No. 960608
Issued to: Century Oil, Inc.
13005 Hamlin Court
Alsip, Illinois 60658
For: waste product
- No. 996032
Issued to: Chem-Clear, Inc.
11800 S. Stony Island Avenue
Chicago, Illinois 60617
For: caustic waste water

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- No. 000052
Issued to: Chem-Clear, Inc.
11800 S. Stony Island Avenue
Chicago, Illinois 60617
For: waste from cleaning of tanks and equipment.
- No. 921838
Issued to: Liquid Dynamics
655 E. 114th Street
Chicago, Illinois 60628
For: contaminated diluted caustic
- No. 921156
Issued to: CID Corp.
P.O. Box 1306
Calumet City, Illinois 60409
For: contaminated diluted caustic water
- No. 820507
Issued to: CID Corp.
P.O. Box 1306
Calumet City, Illinois 60409
For: caustic waste water
- No. 996032
Issued to: Chem-Clear, Inc.
11800 S. Stony Island
Chicago, Illinois 60617
For: caustic waste water
- No. 800302
Issued to: Chemical Waste Management of Illinois
P.O. Box 1296
Calumet City, Illinois 60409
For: caustic waste water
- No. 995677
Issued to: American Recovery
Riley Road
East Chicago, Indiana 46312
For: waste hydrocarbons

IEPA has also issued special waste hauling permits to Hannah for the years 1981 and 1983 through 1987. Each bears the number 0986. Copies of those permits have been sent to U.S. EPA under separate cover. (Presumably, a permit was also issued for 1982, but it cannot be located.)

Request No. 10:

10. Provide a description and map of all lagoons, evaporation ponds, and discharge points (opened or closed) at the above referenced site.

Response No. 10:

A diagram of the site displaying the requested information has been sent to U.S. EPA under separate cover. The diagram indicates former "evaporation ponds." The evaporation ponds are no longer on the facility. They were removed under the direction of the Metropolitan Sanitary District in 1979. The actual removal was performed by Browning-Ferris Industries. All documents relating to the removal have also been sent to U.S. EPA.

Request No. 11:

11. Provide a list and description of all liability insurance coverage that is or was carried by you, including any self-insurance provisions that relate to hazardous substances and/or the facility identified above, and copies of all these insurance policies.

Response No. 11:

Copies of Hannah's insurance policies have been sent to U.S. EPA under separate cover. They are as follows:

- Fireman's Fund, Policy No. 2-64-MXP-457-73-65
Policy Period 7/14/82 to 6/9/85
- Fireman's Fund, Policy No. 2-64-MXX-80079578
Policy Period 6/9/85 to 6/9/86
- Fireman's Fund, Policy No. 2-64-MXX-80139960
Policy Period 6/9/86 to 6/9/87
- A \$5 million umbrella policy is currently in effect for the facility. Efforts are being made to locate a copy of the facility, and will be submitted to U.S. EPA when it is obtained.

Hannah Marine has made all reasonable efforts to answer each request as fully as possible. However, the definition of "waste materials" in the January 26, 1987 information request is exceedingly broad and does not comport with any definition under the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., as amended, or the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq., as amended, or any regulations thereunder. No response to the request is intended to be an admission that U.S. EPA is lawfully entitled to the information it has requested, or that any particular action by Hannah subjects it to any statutory, regulatory, or other requirement, and shall not be so understood.

The written statements submitted pursuant to the January 26, 1987 request will be notarized and submitted under the signature of a duly authorized corporate official (who is currently not in the continental United States) certifying that all information contained in such statements is true and accurate to the best of the signatory's knowledge and belief, that a diligent search for all documents responsive to the request has been completed (except as noted), and that all documents submitted to Region V pursuant to the information request are true and authentic to the best of the signatory's knowledge and belief. However, neither 42 U.S.C. §9604(e), nor 42 U.S.C. §6927 contains a requirement for such a signature or certification. Hannah's agreement to provide the signature and certification is not intended to be an admission that U.S. EPA has the authority to require them, or that Hannah is subject to any statutory, regulatory, or other requirement, and shall not be so understood. Hannah waives no rights in responding to the information request.

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Should you have any questions about this response,
kindly contact me at the above number. Thank you for your
cooperation.

Very truly yours,

A handwritten signature in cursive script, reading "Carey S. Rosemarin". The signature is written in dark ink and is positioned above the typed name.

Carey S. Rosemarin

CSR/kp


- RESPONSE NO. 3 & NO. 5 -

1. COMMODITY		SIGNAL WORD	
UAN SOLUTION 32		ATTENTION	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION	CHEMICAL FORMULA
Fertilizer Solution AN Solution 32 Urea, Ammonium Nitrate Solution		Clear liquid Slight ammonia odor Solution of fertilizer in water	MOLECULAR WEIGHT Solution in water
2. PHYSICAL PROPERTIES			
Freezing Point: -16 °F (-27 °C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 68°F (20°C)	
Boiling Point: >212 °F (>100°C)		(only due to water) 2.5 psia (129 mm Hg) @ 68°F (20°C)	
Density (Spec. Gravity) at 68°F (20°C): 10.9 lbs/gal (1.30)		11.0 psia (569 mm Hg) @ 68°F (20°C)	
Kinematic Viscosity, at 77°F (25°C): 55 (cSt)		at 68°F (20°C) Negl. psia (Negl. mm Hg)	
Specific Heat, Btu/lb. °F (cal/g °C): 55 (cSt)		Solubility in Water, %: In all proportions	
Coefficient of Thermal Expansion: per °F		Solubility of Water in Commodity, %: In all proportions	
per °C			
3. HAZARD DATA			
Flashpoint: °F (°C) CC None		NFPA Hazard Classification	
Flammability Limits in Air, Volume %: None		Health	
Autoignition Temperature: °F (°C) None		Reactivity	
Threshold Limit Value (TLV), ppm:			
Short-Term Inhalation Limits:			
Odor Threshold, ppm:			
4. HAZARD ACTION			
FIRE	Non-combustible		
EXPOSURE	HARM		ACTION
	INHALED	Because of low vapor pressure, no harm at normal temperatures.	
	SWALLOWED	Harmful if swallowed.	Induce vomiting by giving an emetic or warm salt water or mustard water.
	ON SKIN	Harmless.	Wash affected areas with soap and water.
	IN EYES	Slightly irritating to eyes.	Flush eyes with water for 15 minutes.
		018	

5. PROTECTIVE MEASURES IN HANDLING

Avoid prolonged contact with skin.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.

Notify plant operations officer.

Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment.

Flush residual with water.

8. COMPATIBILITY WITH MATERIAL

a. Compatibility with:

Steel - compatible

Aluminum -

brass - noncompatible

Stainless Steel - compatible

Compatibility Chart No.

Noncompatible with copper and zinc/containing alloys.

b. Preferred Materials for:

Tanks - steel

Pipes - all iron

Pumps - cast steel

Hoses - polyethylene crosslinked

Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vents mandatory on fixed roof tanks.

Since this is an aqueous solution, precaution should be taken to prevent freezing at temperatures below 32°F.

To minimize corrosion at the surface-air interface, an oil layer may be floated on top.

May dry and leave solid deposits on valves, pumps, etc. that may be corrosive or explosive if it reacts.

by going through a series of temperature cycles to 90°F or higher followed by cooling below this temperature.

To prevent this, all leaks must be stopped and all deposits must be flushed off by a water hose.

10. LABELING REQUIREMENTS

11. CLEANING PROCEDURES

Drain tank, flush with water, remove solution.

CP-4

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

The 32 in the name refers to the percentage by weight of available nitrogen as fertilizer.

1. COMMODITY		SIGNAL WORD	
CREOSOTE		DANGER	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION	CHEMICAL FORMULA
Creosote oil Coal tar Wood creosote		Colorless or yellow, oily liquid.	A mixture of phenols from coal tar.
			MOLECULAR WEIGHT
2. PHYSICAL PROPERTIES			
Freezing Point: $^{\circ}\text{F}$ ($^{\circ}\text{C}$)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)	
Boiling Point: 392-482 $^{\circ}\text{F}$ (200-250 $^{\circ}\text{C}$)		2.5 psia (129 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)	
Density (Spec. Gravity) at 68 $^{\circ}\text{F}$ (20 $^{\circ}\text{C}$): 8.9 lbs/gal (1.07)		11.0 psia (569 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)	
Kinematic Viscosity, at 77 $^{\circ}\text{F}$ (25 $^{\circ}\text{C}$): SSU 52 (8 cSt) (approx.)		at 68 $^{\circ}\text{F}$ (20 $^{\circ}\text{C}$) 0.01 psia (0.5 mm Hg)	
at $^{\circ}\text{F}$ ($^{\circ}\text{C}$): SSU (cSt)		Solubility in Water, %: approximately 2	
Specific Heat, Btu/lb. $^{\circ}\text{F}$ (cal/g $^{\circ}\text{C}$): Approx. 0.62		Solubility of Water in Commodity, %: Less than 1	
Coefficient of Thermal Expansion: per $^{\circ}\text{F}$ 0.0004 Approx.			
per $^{\circ}\text{C}$ 0.0008 Approx.			
3. HAZARD DATA		NFPA Hazard Classification (Estimated)	
Flashpoint: 165 $^{\circ}\text{F}$ (74 $^{\circ}\text{C}$) CC			
Flammability Limits in Air, Volume %:			
Autoignition Temperature: 637 $^{\circ}\text{F}$ (336 $^{\circ}\text{C}$)			
Threshold Limit Value (TLV), ppm: 5 (estimated)			
Short-Term Inhalation Limits:			
Odor Threshold, ppm: 5 (estimated)			
4. HAZARD ACTION			
FIRE	Combustible. Poisonous gases produced in fire. Wear goggles, self-contained breathing apparatus, and rubber overclothing, gloves. Extinguish with water, dry chemical, alcohol foam, or carbon dioxide. Cool exposed containers with water.		
EXPOSURE	HARM		ACTION
	INHALED	Poisonous if inhaled at high concentrations. Causes weakness, headache, dimness of vision, difficult breathing, mental confusion. Collapse and death may occur in a few minutes of massive exposure.	Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, administer artificial respiration. Get medical attention immediately.
	SWALLOWED	Poisonous if swallowed. Will cause severe corrosion of mouth, throat and stomach, even perforation. Also symptoms as inhaled. About 1 teaspoonfull may cause death.	Do NOT induce vomiting. Give olive or other vegetable oil. Get medical attention immediately.
	ON SKIN	Causes severe burns. Produces no immediate pain; only skin whitening, then burn. Absorbed through skin fast, produces symptoms as inhaled and may be fatal.	Remove from skin promptly and thoroughly. Wash affected areas with soap and water. Remove contaminated clothing immediately and launder before reuse. Get medical attention immediately.
	IN EYES	Severe burns and possible loss of eye.	Remove from eye as fast as possible. Flush eyes with water for 15 minutes. Get medical attention immediately.

5. PROTECTIVE MEASURES IN HANDLING 5-3

Have adequate ventilation.
Avoid breathing of vapor.
Avoid contact with skin. Wash hands before eating or smoking.
Keep containers closed and away from heat, sparks and open flame.
Wear protective clothing (goggles or face shield, impervious gloves and impervious over-clothing).
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

If possible, pump off to containment at separator.
Absorb residual by Vermiculite, dry sand, or other absorbent, load into closed containers, and transport away for final disposal. If solidified, remove mechanically.
Water containing cresol in ppm concentrations is poisonous to aquatic life and may upset sewage works.
If such water is dumped into sewers, notify sewage works.

B. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel	-	compatible
Aluminum	-	compatible
Brass	-	compatible
Stainless Steel	-	compatible

Compatibility Chart No. 15
Possible stress cracks in steel.

b. Preferred Materials for:

Tanks	-	steel
Pipes	-	steel
Pumps	-	all-iron
Hoses	-	Polyethylene crosslinked; Viton
Gaskets	-	JV-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent mandatory on fixed roof tanks.
Handled in liquid form at elevated temperatures; thus, heat coiled and/or insulated tanks and heat-traced piping and pumps will be required.
Check with customer for the temperature of solidification and handling.

10. LABELING REQUIREMENTS

Poison.

11. CLEANING PROCEDURES

CP-9

Drain tank, steam, remove condensate and air dry; 5% caustic soda solution may be used for final neutralization.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		CUMENE		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Cumol Isopropylbenzene 2 phenyl propane		DESCRIPTION Colorless liquid Gasoline-like odor, strong Floats on water		CHEMICAL FORMULA $C_6H_5CH(CH_3)_2$	
				MOLECULAR WEIGHT 120.19	
2. PHYSICAL PROPERTIES					
Freezing Point: $-141^{\circ}F$ ($-96^{\circ}C$)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ $125^{\circ}F$ ($52^{\circ}C$)			
Boiling Point: $306^{\circ}F$ ($152^{\circ}C$)		2.5 psia (129 mm Hg) @ $^{\circ}F$ ($^{\circ}C$)			
Density (Spec. Gravity) at $68^{\circ}F$ ($20^{\circ}C$): 7.3 lbs/gal (0.875)		11.0 psia (569 mm Hg) @ $^{\circ}F$ ($^{\circ}C$)			
Kinematic Viscosity, at $77^{\circ}F$ ($25^{\circ}C$): SSU 29 (0.87 cSt)		at $68^{\circ}F$ ($20^{\circ}C$): 0.06 psia (-3 mm Hg)			
at $^{\circ}F$ ($^{\circ}C$): SSU		Solubility in Water, %: Insoluble			
Specific Heat: 0.44 Btu/lb. $^{\circ}F$ (0.44 cal/g. $^{\circ}C$)		Solubility of Water in Commodity, %: Insoluble			
Coefficient of Thermal Expansion: 0.000559 per $^{\circ}F$ 0.00101 per $^{\circ}C$					
3. HAZARD DATA					
Flashpoint: $111^{\circ}F$ ($44^{\circ}C$) CC		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %: 0.9 - 6.5				Health	
Autoignition Temperature: $797^{\circ}F$ ($425^{\circ}C$)				Reactivity	
Threshold Limit Value (TLV): 50 ppm					
Short-Term Inhalation Limits: Data not available					
Odor Threshold, ppm: Data not available					
4. HAZARD ACTION					
FIRE		Combustible. Cool exposed containers with water. Extinguish with dry chemical, foam, or carbon dioxide.			
EXPOSURE		HARM		ACTION	
INHALED		If inhaled for prolonged period or at high concentrations will cause dizziness, drowsiness, narcotic action with long lasting effects.		Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, apply artificial respiration. Get medical attention if effect noticed.	
SWALLOWED		Harmful if swallowed. Ingestion will cause irritation of mucous membranes, vomiting; also effects as inhaled. Between 1 oz. and 1 pint may cause death.		Do NOT induce vomiting. Have victim drink milk or water. Get medical attention.	
ON SKIN		Irritating to skin on prolonged contact.		Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.	
IN EYES		May irritate eyes		Flush eyes with water for 15 minutes. Get medical attention.	

5. PROTECTIVE MEASURES IN HANDLING S.2

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield and impervious gloves.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off to containment at separator.
Absorb residual by Vermiculite, dry sand or other solid absorber, place into closed containers and haul away for disposal.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - Compatible
Aluminum - Compatible
Brass - Compatible
Stainless Steel - Compatible

Compatibility Chart No. 10

Non-corrosive to the usual construction materials.

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all iron or bronze fitted
Hoses - Polyethylene crosslinked,
Viton
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Storage temperature: ambient
Venting: std. pressure-vacuum vent on fixed roof tanks.

10. LABELING REQUIREMENTS

None

11. CLEANING PROCEDURES

CP-9 or CP-7

Strip tank, steam clean and remove condensate and air dry;
or wash with detergent and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Cumene is similar to benzene but less toxic.

023

1. COMMODITY		FUEL OIL NO.2		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Home heating oil Domestic heating oil		DESCRIPTION Oily, yellow-brown liquid. Characteristic fuel oil odor. Floats on water.		CHEMICAL FORMULA Mixture of hydrocarbons	
				MOLECULAR WEIGHT	
2. PHYSICAL PROPERTIES					
Freezing Point: -20 °F (-29 °C)		Vapor Pressure: 1.5 psia (77.6 mm Hg) @ 68 °F (20 °C)			
Boiling Point: 540-640 °F (282-338 °C)		2.5 psia (129 mm Hg) @ 68 °F (20 °C)			
Density (Spec. Gravity) at 68 °F (20 °C): 7.3-7.5 lbs/gal (0.87-0.90)		11.0 psia (569 mm Hg) @ 68 °F (20 °C)			
Kinematic Viscosity, at 77 °F (25 °C): SSU 33 (2 cSt)		at 68 °F (20 °C): 0.14 psia (2 mm Hg)			
at 68 °F (20 °C): SSU 46 (6 cSt)		Solubility in Water, %: Insoluble			
Specific Heat, Btu/lb. °F (cal/g °C): 0.47		Solubility of Water in Commodity, %: Insoluble			
Coefficient of Thermal Expansion: per °F					
per °C					
3. HAZARD DATA					
Flashpoint: 136 °F (58 °C) CC		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %: 0.6 - 6.5				Reactivity	
Autoignition Temperature: 494 °F (256 °C)					
Threshold Limit Value (TLV), ppm:					
Short-Term Inhalation Limits:					
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Partially filled containers may explode in fire. Extinguish fire with dry chemical, foam or carbon dioxide. Do not expose containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Labor slightly irritating to nose, throat and eyes. Will cause headache and giddiness. Liquid in lungs will cause rapidly developing pulmonary edema.		Move to fresh air. If breathing is difficult. If liquid aspirated into lungs, call attention immediately.	
SWALLOWED		Harmful if swallowed. Causes nausea, vomiting, cramps, depression of central nervous system, to coma and death. Possible delayed kidney and liver damage. About one pint will cause death.		DO NOT INDUCE VOMITING. Have victim drink water or milk. If appreciable quantity swallowed, call attention and stomach lavage.	
ON SKIN		Slightly irritating on prolonged contact.		Remove contaminated clothing. Remove by wiping and wash affected area with soap and water.	
IN EYES		Irritating to eyes.		Flush with water for 15 minutes.	

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
 Avoid prolonged breathing of vapor.
 Avoid prolonged contact with skin.
 Keep containers closed and away from heat, sparks and open flame.
 Wear goggles or face shield and impervious gloves.
 Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
 Absorb residual by Vermiculite or other solid absorber and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - compatible

Aluminum - compatible

Brass - compatible

Stainless Steel - compatible

Compatibility Chart No. 9

Compatible with the usual construction materials.

b. Preferred Materials for:

Tanks - steel

Pipes - steel

Pumps - all-iron or bronze fitted

Hoses - Polyethylene crosslinked;
Buna-N; Viton

Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vents may be used on fixed roof tanks; however standard return bends acceptable.
 State of New Jersey Chapt. 16 establishes choice of return bend or P-V vent based on tank size for vapor pressure materials over .02 psia @ 70°F.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air dry.

= CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		SIGNAL WORD	
BENZENE		DANGER	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION	CHEMICAL FORMULA
Benzol Phenylhydride Benzole Phene Cyclohexatriene Coal Naphtha		Colorless liquid Aromatic odor Floats on water Flammable Irritating vapor is produced	C_6H_6
			MOLECULAR WEIGHT 78.11
2. PHYSICAL PROPERTIES			
Freezing Point: 42 °F (5.5 °C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 68 °F (20 °C)	
Boiling Point: 176 °F (80.1 °C)		2.5 psia (129 mm Hg) @ 88 °F (31 °C)	
Density (Spec. Gravity) at 68 °F (20 °C): 7.3 lbs/gal (0.879)		11.0 psia (569 mm Hg) @ 108 °F (42 °C)	
Kinematic Viscosity, at 77 °F (25 °C): SSU 2E (0.74 cSt)		at 68 °F (20 °C): 1.5 psia (78 mm Hg)	
at 100 °F (38 °C): SSU			
Specific Heat: 0.419 Btu/lb. °F (0.419 cal/g. °C)		Solubility in Water, %: 0.06	
Coefficient of Thermal Expansion: 0.000659 per °F		Solubility of Water in Commodity, %: 0.08	
0.00115 per °C			
3. HAZARD DATA			
Flashpoint: 12 °F (11 °C) CC		NFPA Hazard Classification	
Flammability Limits in Air, Volume %: 1.3 - 7.9			
Autoignition Temperature: 1097 °F (591 °C)			
Threshold Limit Value (TLV), ppm: 1			
Short-Term Inhalation Limits: Ceiling level is 5 ppm for any 15 minute period during the 8 hour day.			
Odor Threshold, ppm: 5 ppm			
4. HAZARD ACTION			
FIRE	Flammable. May be ignited by sparks, open flame, or heat. Flashback along vapor trail may occur. Vapor may explode if ignited in enclosed area. Extinguish with dry chemical, foam, or carbon dioxide. Because of splashing water may be ineffective. Cool exposed containers with water. Wear goggles and self-contained breathing apparatus if fighting fire in enclosed area. Smoky flame is characteristic for this material.		
EXPOSURE	HARM		ACTION
	INHALED	Vapor irritating to nose, throat and eyes. If inhaled for prolonged periods or at high concentrations will cause headache, dizziness, breathlessness, chest constriction, even coma and death. Repeated inhalation presents a leukemia hazard.	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, apply artificial respiration. Get medical attention if all effects noticed.
	SWALLOWED	Harmful if swallowed. Burning abdominal pain, vomiting. Other symptoms, same as inhaled. Between 1 oz. and 1 pint may cause death.	Do NOT induce vomiting. If victim is conscious, have victim drink water or milk. Get medical attention.
	ON SKIN	Continuing contact may cause smarting, blistering and breakage of skin. Repeated contacts with broken skin may result in adsorption causing results as inhaled.	Wash affected areas with soap and water. Remove all contaminated clothing.
	IN EYES	Considerable irritation to eyes.	Flush with plenty of water for 15 minutes. Get medical attention.

5. PROTECTIVE MEASURES IN HANDLING S-4

Have adequate ventilation.
 Do not breathe vapor.
 Avoid contact with skin.
 Keep containers closed and away from heat, sparks and open flame.
 Wear goggles or face shield and impervious clothes.
 Wear air-purifying respirators where concentration exceeds 1 ppm.
 Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.
 Benzene vapors are more toxic than those of comparable hydrocarbons and have cumulative effects when inhaled over extended period of time.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
 Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Use water fog nozzles or foam to hold down vapor.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Cover with foam to reduce vaporization.
 Drain spilled material to separator and pump to containment.
 Absorb residue by Vermiculite or other solid absorbent, load into covered containers and haul away for final disposal.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel. - Compatible
 Aluminum. - Compatible
 Brass. - Compatible
 Stainless Steel. - Compatible

Compatibility Chart No. 11

Attacks natural rubber and many synthetics.

b. Preferred Materials for:

Tanks - steel
 Pipes - steel
 Pumps - all iron or bronze fitted.
 Hoses - Polyethylene crosslinked;
 Vitor
 Gaskets - JN-6C

9. STORAGE CONSIDERATIONS

Storage temperature: ambient
 Venting: Std. pressure-vacuum vent; heat traced in northern climate, mandatory on fixed roof tanks.
 Because of its high freezing point, storage tanks are coiled and piping (suction) and pumps are heat traced.
 Some states may require internal floating roofs due to vapor pressure considerations.

10. LABELING REQUIREMENTS

Flammable liquid.

11. CLEANING PROCEDURES

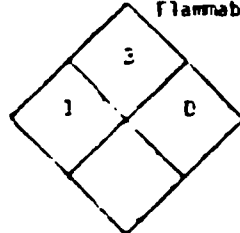
CP-2

Drain all residual benzene.
 Gasfree mechanically and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Pipeline tracing and tank heating coils and/or insulation required in colder regions.
 Benzene handling practices must comply with the OSHA regulations concerning the occupational exposure to benzene, including monitoring of exposure, method of compliance, medical surveillance, employee education and training, and record keeping. Note the current TLV of 1 ppm and the ceiling value of 5 ppm.

1. COMMODITY		SIGNAL WORD	
ACETONE		CAUTION	
COMMON SYNONYMS AND TRADE NAMES 2- Propanone Propanone Dimethylketone	DESCRIPTION Colorless liquid Sweet odor Floats and mixes with water Highly Flammable	CHEMICAL FORMULA <chem>CH3COCH3</chem>	
		MOLECULAR WEIGHT 58.08	
2. PHYSICAL PROPERTIES		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 35 °F (2 °C) 2.5 psia (129 mm Hg) @ 55 °F (13 °C) 11.0 psia (569 mm Hg) @ 115 °F (46 °C) at 65 °F (20 °C): 42 psia (180 mm Hg)	
Freezing Point: -138 °F (-94.7 °C) Boiling Point: 133 °F (56 °C) Density (Spec. Gravity) at 68 °F (20 °C): 6.6 lbs/gal (0.79) Kinematic Viscosity, at 77 °F (25 °C): SSU 27 (0.43 cSt) at °F (°C): SSU Specific Heat: 0.522 Coefficient of Thermal Expansion: 0.000513 per °F 0.00146 per °C		Solubility in Water, %: Soluble in all proportions Solubility of Water in Commodity, %: Soluble in all Proportions	
3. HAZARD DATA		NFPA Hazard Classification 	
Flashpoint: 0 °F (-18 °C) CC: 15 °F (-5 °C) CC Flammability Limits in Air, Volume %: 2.6 - 12.8 Autoignition Temperature: 865 °F (465 °C) Threshold Limit Value (TLV): 1000 ppm Short-Term Inhalation Limits: 1000 ppm for 30 min Odor Threshold, ppm: 200 - 400			
4. HAZARD ACTION			
FIRE	Flammable. May be ignited by heat, sparks and open flame. Vapor may explode if ignited in an enclosed area. Partially filled containers may explode if fired. Vapor is heavier than air and flashback along vapor trail may occur. Extinguish with foam, alcohol foam, dry chemical or carbon dioxide. Cool exposed containers with water.		
EXPOSURE	HARM		ACTION
	INHALED	If inhaled for prolonged period or at high concentrations will cause difficult breathing or loss of consciousness; however exposure to 25,000 ppm for 30-60 minutes without symptoms has been reported.	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, apply artificial respiration. Get medical attention if ill effects noticed.
	SWALLOWED	Harmful if swallowed. Ingestion will cause nausea, vomiting, other symptoms as irritation. About 1 pint may cause death.	Induce vomiting by giving an emetic such as warm salt water or mustard water. Get medical attention promptly.
	ON SKIN	Slightly irritating to skin on prolonged contact.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.
	IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.

5. PROTECTIVE MEASURES IN FIRE

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Use water fog nozzles to hold down vapor.
Dilute with large volumes of water before discharge.
Vapor from Acetone-water solutions can produce explosive mixtures. A solution containing 4% Acetone in water still has a flash point of 129°F (54°C).

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - Compatible

Aluminum - Compatible

Brass - Compatible

Stainless Steel - Compatible

Compatibility Chart No. 8

Non-corrosive to the usual materials of construction.

b. Preferred Materials for:

Tanks - steel

Pipes - steel

Pumps - all-iron or bronze fitted

Hoses - Polyethylene crosslinked; Butyl, Hypalon less resistant

Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent mandatory on fixed roof tanks.
Internal floating roofs may be required in most states because of high vapor pressure considerations.
At normal ambient temperatures vapor space is generally too rich to burn if saturated or nearly saturated.

10. LABELING REQUIREMENTS

Flammable liquid.

11. CLEANING PROCEDURES

Drain tank, wash with water, remove solution and air dry.

CP-3

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Industrial Hygiene And Toxicology Division
Environmental Conservation And Toxicology Department
Form U-1967-A (8-78)

Section I

Name and Synonyms Decanted Oil		Emergency Phone Number (312) 856-5371
Manufacturer's Name Amoco Oil Company		Warning Statement Warning! Combustible. Can cause skin irritation on prolonged or repeated contact. Similar materials have caused cancer in laboratory animals. Boiler ash will contain high levels of metal residues.
Address 200 East Randolph Drive, Chicago, Illinois 60601		
Product Identification Fuel Oil		DOT Classification Combustible liquid
CAS Number - - - Formula - - - PA Number - - -		

Section II - Important Components

Catalytic-Cracked Cycle Oil.

Permissible Exposure Concentration

OSHA Permissible Exposure Limit 0.2 mg/m³

Section III - Health Effects Of Exposure

Eye

Minimally irritating.

Maximum primary eye irritation score of 2.0/110.0; 24 hr. (rabbit).

Minimally irritating for acute exposures. Primary dermal irritation score of 0.2/8.0 (rabbits). However, prolonged or repeated contact is likely to cause skin irritation through defatting. Acute dermal LD₅₀ of greater than 2.0 g/kg (rabbit); practically non-toxic for acute exposures by this route. Cancer hazard based on skin painting tests with laboratory animals. See Section X.

Inhalation

None expected under normal conditions of use. See attached statement regarding inhalation of boiler ash.

Ingestion

Acute oral LD₅₀ of 5.27 g/kg (male rats) and 4.32 g/kg (female rats); practically non-toxic for acute exposures by this route.

Section IV - Emergency And First Aid Procedures

Eye Contact

Flush with plenty of water.

Skin Contact

Promptly wash exposed skin with soap and water. Get medical attention if irritation develops. Remove contaminated clothing and thoroughly clean and dry before reuse.

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get medical attention.

Ingestion

If a large amount is ingested, induce vomiting, and get medical attention.

Wear protective clothing, gloves, and oil impervious footwear when contact is likely.
Respiratory If ventilation is inadequate use NIOSH-MSHA certified combination respirator
which will provide protection against organic vapor/particulates.

Ventilation (Type Required): General area

Section VI - Fire Protection Information

Flash Point (Method)	Minimum 150°F	Autoignition Temperature	N/A
Flammable Limits (by Volume in Air)	Upper N/A	Lower	N/A
Extinguishing Media	Dry Chemical (B-C), carbon dioxide, water fog, foam		
Unusual Fire and Explosion Hazards	None		

Section VII - Physical Properties And Reactivity Data

Boiling Point (°F)	N/A	Vapor Pressure (mm Hg 20 °C)	N/A
Melting Point (°F)	- - -	Vapor Density (Air = 1)	N/A
Specific Gravity (Water = 1)	1.0 - 1.08	Solubility in Water	Negligible
Viscosity	35-50 cs @210°F		
Appearance and Odor	Black, viscous liquid		
Hazardous Polymerization	Occurs	Does NOT Occur	X
Products Formed When Subjected to High Temperature or Combustion	N/A		
Materials to Avoid	N/A		

Section VIII - Storage and Environmental Protection

Storage Requirements	Store in combustible liquids storage area.		
Procedures in Case of Breakage or Leakage	Contain on an absorbent material.		
Waste Disposal	Controlled incineration; consult local ordinances for compliance.		
Biodegradability	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unknown
Bioaccumulation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unknown

Section IX - Marketing And Use Regulated By (Specific Regulations)

<input type="checkbox"/> FDA	<input type="checkbox"/> USDA	<input type="checkbox"/> Other (Specify)
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Section X - Comments

This product is not expected to present a significant cancer risk to humans if the personal hygiene and protection measures detailed in other sections of this data sheet are followed.

Products of this type have been shown to cause skin cancer in laboratory animals following prolonged and frequent skin contact. In addition, ash from boilers in which decanted oil has been burned can contain high concentrations of antimony, nickel, vanadium, and arsenic which, if inhaled in sufficient quantities, could be harmful. The ash can also cause skin irritation following extended skin contact, and the soot and tar fraction of the ash is likely to be carcinogenic.

Amoco Oil Company warnings for this product are found in Section XI of this data sheet. =

For additional information call 312/856-7690

N/A - Data not available.

Information Supplied By	Signature	Title	Date
Stephen A. Elbert	<i>Stephen A. Elbert</i>	Director, Product Safety (USA)	June 20, 1993

Section XI

WARNING!

COMBUSTIBLE!

CAN CAUSE SKIN IRRITATION ON PROLONGED OR REPEATED CONTACT.

SIMILAR MATERIALS HAVE CAUSED CANCER IN LABORATORY ANIMALS.

BOILER ASH WILL CONTAIN HIGH LEVELS OF METAL RESIDUES.

To be used in closed systems as fuel where human contact will be minimal.

This material may be a significant cancer risk to humans if the hygiene and personal protection precautions in this data sheet are not followed.

Keep away from heat and open flame. Use with adequate ventilation. Avoid skin contact. In case of contact, wash exposed skin with soap and water. Get medical attention if irritation develops. Wear protective clothing, gloves, and oil-impervious footwear when contact is likely. Remove contaminated clothing and thoroughly clean and dry before reuse.

Avoid breathing ash dust and oil vapors. Use with adequate ventilation. If ventilation is inadequate, use NIOSH-MSHA certified combination respirator which will provide protection against organic vapor/particulates.

Section I

Trade Name & Synonyms

The name under which the product is marketed and the common commercial name of the product.

Product Identification

The chemical or generic name of single elements and compounds or for compounded products and mixtures, the general type of product, e.g., calcium complex grease, motor oil, polymer, sulfonate, surfactant, etc.

CAS Number

The Chemical Abstracts Registry number, if applicable.

EPA Number

The code number assigned by the Environmental Protection Agency, if applicable.

Formula

The chemical formula for single elements or compounds.

DOT Classification

The appropriate classification as determined by the regulations of the Office of Hazardous Materials, Department of Transportation.

Section II

Important Components

The major component as well as any minor one(s) having potential for harm which are considered when evaluating the product.

Permissible Exposure Concentration

Indicates Threshold Limit Value (TLV), any limit established by a governmental regulatory agency, or an estimate if none have been established.

Section III Health Effects of Exposure

Possible health hazards as derived from human observation, animal studies or from the results of studies with similar products.

Medial Lethal Dose or Concentration (LD50, LC50)

That dose or concentration of the material which will produce death in 50 per cent of test animals. For inhalation, the exposure time is indicated.

Irritation Index

An empirical score for eye and skin irritation when tested by the methods described in Section 1500.40 of the Federal Hazardous Substances Act.

Sensitizer

A substance which will cause on or in normal living tissue, a hypersensitivity which becomes evident on reapplication of, or exposure to, the same substance.

Section IV Emergency and First Aid Procedures

Gives first aid and emergency procedures in case of eye and/or skin contact, ingestion and inhalation.

Section V Personal Protection Information

Eye, Skin, Respiratory

The type of protective equipment that is necessary for the safe handling and use of the product.

Ventilation

Refers to the type recommended: i.e., local exhaust, mechanical, etc.

Section VI Fire Hazard Information

Flash Point (State Method Used)

The temperature in degrees F at which a liquid will give off enough flammable vapor to ignite in the presence of a source of ignition.

Autoignition Temperature

The minimum temperature required for a substance to initiate self combustion in the absence of a spark or flame.

Flammable Limits

The range of gas or vapor concentration (per cent by volume in air) which will burn or explode if an ignition source is present. Lower means the lower flammable limit and upper the upper flammable limit given in per cent.

Extinguishing Media

Specifies the fire fighting agent(s) that should be used to extinguish fires.

Unusual Fire and Explosion Hazards

Refers to special procedures required if unusual fire hazards are involved.

Section VII Physical Properties and Reactivity Data

Vapor Pressure

The pressure of saturated vapor above the liquid expressed in mm Hg at 20°C.

Viscosity

A measure of the resistive flow of liquid due to gravity or for viscous liquids a measure of the resistance to turning or twisting. State method, units and temperature.

Vapor Density

The relative density or weight of a vapor or gas (with no air present) compared with an equal volume of air at ambient temperature.

2.1

The degree of acidity or basicity of the material in specific concentration

Specific Gravity

The ratio of the weight of a volume of the material to the weight of an equal volume of water.

Solubility in Water

The solubility of a material by weight in water at room temperature. The terms negligible, less than 0.1 per cent; slight, 0.1 to 1 per cent; moderate 1 to 10 per cent; appreciable, 10 per cent or greater.

Appearance and Odor

The general characterization of the material, i.e., powder, colorless liquid, aromatic odor, etc.

Hazardous Polymerization

Refers to that reaction which takes place at a rate which releases large amounts of energy. Indicates whether or not it may occur and under what storage conditions.

Materials to Avoid

Indicates those material or conditions causing the product to react violently, releasing large amounts of energy.

Section VIII Storage and Environmental Protection

Procedure in Case of Breakage or Leakage

Indicates precautions necessary in such events. Includes clean-up procedures and hazards that may be created, i.e., fire, explosions, etc.

Biodegradability/Bioaccumulation

Indicates whether or not the product will biodegrade or bioaccumulate.

The information contained herein is based on data available to us and is believed to be correct. Since this information may have been obtained in part from independent laboratories or other sources not under our direct supervision, no representation is made that the information is accurate, reliable, complete or representative and Buyer may rely thereon only at Buyer's risk. We have made no effort to censor nor to conceal deleterious aspects of this product. Further, since we cannot anticipate or control the many different conditions under which this information or our products may be used, we make no guarantee that the health and safety precautions we have suggested will be adequate for all individuals and/or situations involving its handling and use. Likewise we make no guarantee or warranty of any kind that the use or disposal of this product is in compliance with all federal, state or local laws. It is the obligation of each user of the product mentioned herein to determine and comply with the requirements of all applicable statutes.



Amoco Oil Company
200 East Randolph Drive
Chicago, Illinois 60601

1. COMMODITY		ETHYL ALCOHOL		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Ethanol Grain alcohol Alcohol Spirit Spirit of wine Denatured alcohol		DESCRIPTION Colorless liquid Alcohol odor Floats and mixes with water Flammable		CHEMICAL FORMULA C_2H_5OH	
				MOLECULAR WEIGHT 46.07	
2. PHYSICAL PROPERTIES					
Freezing Point: $-173^{\circ}F$ ($-114^{\circ}C$)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ $85^{\circ}F$ ($29^{\circ}C$)			
Boiling Point: $173^{\circ}F$ ($78^{\circ}C$)		2.5 psia (129 mm Hg) @ $105^{\circ}F$ ($41^{\circ}C$)			
Density (Spec. Gravity) at $68^{\circ}F$ ($20^{\circ}C$): 6.6 lbs/gal (0.790)		11.0 psia (569 mm Hg) @ $^{\circ}F$ ($^{\circ}C$)			
Kinematic Viscosity, at $77^{\circ}F$ ($25^{\circ}C$): SSU 30 (1.35 cSt)		at $68^{\circ}F$ ($20^{\circ}C$) 0.805 cSt (41 mm ² /s)			
at $^{\circ}F$ ($^{\circ}C$): SSU					
Specific Heat: 0.60		Solubility in water, %: In all proportions			
Coefficient of Thermal Expansion: 0.000622 per $^{\circ}C$ 0.00112 per $^{\circ}F$		Solubility of water in Commodity, %: In all proportions			
3. HAZARD DATA					
Flashpoint: $65^{\circ}F$ ($18^{\circ}C$) CC		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %: 3.3 - 19.0				Reactivity	
Autoignition Temperature: $689^{\circ}F$ ($365^{\circ}C$)					
Threshold Limit Value (TLV): 1000 ppm					
Short-Term Inhalation Limits: 5000 ppm for 15 min.					
Odor Threshold, ppm: 10 ppm					
4. HAZARD ACTION					
FIRE		<i>Med Lib.</i> <i>Al. & Spirit White</i>			
Flammable. May be ignited by heat, sparks, or open flame. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with dry chemical, alcohol foam, or carbon dioxide. Direct water stream on cool exposed containers with water.					
EXPOSURE		HARM		ACTION	
INHALED		High concentrations are irritating to eyes, nose, throat. Headache, drowsiness, intoxication.		Remove to fresh air. Give strong coffee. If breathing is affected, get medical attention.	
SWALLOWED		Burning of mucous membranes and stomach. Drowsiness, intoxication, headache. About one pint may cause death.		Give strong coffee. If large amounts swallowed, get medical attention.	
ON SKIN		May cause irritation on prolonged contact.		Wash affected areas with water.	
IN EYES		Irritation of the eyes.		Flush eyes with water.	

ETHYL ALCOHOL

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield and impervious gloves.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Spilled material is still subject to tax liability and must be disposed of as directed by ATFU Representative.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel	-	Compatible
Aluminum	-	Compatible
Brass	-	Compatible
Stainless Steel	-	Compatible

Compatibility Chart No. 6

Non-corrosive to the usual construction materials.

b. Preferred Materials for:

Tanks	-	steel
Pipes	-	steel
Pumps	-	all-iron or bronze fitted
Hoses	-	Most elastomers acceptable; prefer Polyethylene crosslinked or Butyl
Gaskets	-	JM-60

9. STORAGE CONSIDERATIONS

Storage temperature: ambient.
Venting: Std. pressure-vacuum vent mandatory on fixed roof tanks.
Anhydrous ethanol is hygroscopic. Customer may require vent drier or nitrogen pad.

10. LABELING REQUIREMENTS

Flammable liquid.

11. CLEANING PROCEDURES

CP-3

Drain tank, flush with water and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Ethyl alcohol may be stored either pure (usually 190 proof or anhydrous 200 proof) or denatured. Denatured ethyl alcohol may have an unpleasant odor. A tax liability of \$10.50 per proof gallon (1 gal. of 200 proof alcohol) applies and is enforced by the Treasury Dept's Alcohol and Tobacco and Firearms unit. Storage of Ethanol, undenatured, (pure), involves extensive approvals, permits and special paper work which deal not only with the inventory and billing procedures but also with the physical arrangement of valves, unions, pumps, area enclosure, access roads, lighting, joint seals, etc. Mixing with demineralized water requires sophisticated mixing vessels or complicated in-line blending equipment to obtain acceptable uniformity. Denatured product requires similar blending equipment to assure uniform mixing of various denaturant compounds.

1. COMMODITY

DIETHYLENE GLYCOL

SIGNAL WORD

ATTENTION

COMMON SYNONYMS AND TRADE NAMES

Diglycol 3-Oxa-1,5-pentanediol
Glycol Ether
DEG
Dihydroxy-diethyl ether
2, 2' Oxybisethanol
8,8' - Dihydroxydiethyl ether
Bis (2-hydroxyethyl) ether

DESCRIPTION

Colorless, oily liquid
Odorless
Sinks and mixes with water

CHEMICAL FORMULA

 $(HOCH_2CH_2)_2O$

MOLECULAR WEIGHT

106.12

2. PHYSICAL PROPERTIES

Freezing Point: 20°F (-8°C)
Boiling Point: 473°F (245°C)
Density (Spec. Gravity) at 68°F (20°C): 9.32 (1.118)
Kinematic Viscosity, at 77°F (25°C): SSU 141 (30 cSt)
at 59°F (15°C): SSU 210 (45 cSt)

Specific Heat: 0.55

Coefficient of Thermal Expansion: 0.00050 per°F
0.00090 per°C

Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 355°F (179°C)

2.5 psia (129 mm Hg) @ °F (°C)

11.0 psia (569 mm Hg) @ °F (°C)

at 68°F (20°C) Neg.-psia (0.0 mm Hg)

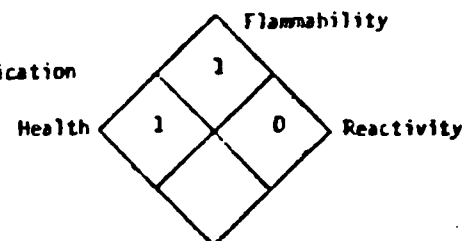
Solubility in Water, %: In all proportions

Solubility of Water in Commodity, %: In all proportions

3. HAZARD DATA

Flashpoint: 255°F (124°C) CC
Flammability Limits in Air, Volume %: 1.6 - 10.8
Autoignition Temperature: 444°F (229°C)
Threshold Limit Value (TLV): 100
Short-Term Inhalation Limits:
Odor Threshold, ppm: Not pertinent

NFPA
Hazard
Classification



4. HAZARD ACTION

FIRE

Combustible.
Extinguish with dry chemicals, foam, carbon dioxide, or water spray.
Foam or water may cause frothing.

EXPOSURE

HARM

ACTION

INHALED

No problem likely under normal conditions.

If ill effects noticed, get medical attention.

SWALLOWED

Large amounts may cause damage of kidney and liver.
About one quart will cause death.

Induce vomiting by giving salt or mustard water.

ON SKIN

May cause slight skin irritation on prolonged contact.

Wash affected areas with soap and water

IN EYES

Irritation

036

Wash with water.

DIETHYLENE GLYCOL

5. PROTECTIVE MEASURES IN HANDLING

S-1

Avoid prolonged contact with skin.
Wear goggles or face shield.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to confinement.
Flush residual with water. Dilute with water before discharge to sewer or sanitary canals.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - Compatible
Aluminum - Compatible
Brass -
Stainless Steel - Compatible

Compatibility Chart No. 5

Most materials of construction suitable.

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron
Hoses - Polyethylene crosslinked;
Butyl; Buna-N
Gaskets - JM-50

9. STORAGE CONSIDERATIONS

May require heating and insulation of tanks, pipes, hoses, etc.
Higher viscosity at lower ambient temperatures will cause flow problems if not considered.
Venting: Std. pressure-vacuum vent recommended.
Material is not very heat sensitive.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-4

Drain tank, wash with water; remove solution and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

037

Product Background

CELANES
CHEMICAL
COMPANY, INC.

CELANESE CHEMICAL COMPANY, INC. 1250 WEST MOCKINGBIRD LANE DALLAS, TX 75247 PHONE: 214-689-4000

DIETHYLENE GLYCOL

DESCRIPTION

Diethylene glycol is a clear, colorless syrup-like liquid with little odor. It will dissolve in water. Diethylene glycol does not readily react with other materials or itself.

EFFECTS ON PEOPLE

Contact with the liquid is slightly irritating to the skin and eyes. Exposure to harmful amounts of the vapor is very unlikely since diethylene glycol does not readily vaporize at room temperature.

USES

Diethylene glycol is used in unsaturated polyesters, polyurethanes, alkyds, and resin esters. Diethylene glycol has significant applications as a solvent for dye stuffs, inks, and duplicating fluids. It is also blended into anti-freeze formulations.

CAS No. 111-46-6
Rev. 0, 2/80

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ASPHALT

SIGNAL WORD

CAUTION

1. COMMODITY

COMMON SYNONYMS AND TRADE NAMES

Petroleum pitch
Bitumen
Mineral pitch

DESCRIPTION

Thick dark brown to black semisolid
Tar odor
May float or sink in water

CHEMICAL FORMULA

Mixture

MOLECULAR WEIGHT

Mixture

2. PHYSICAL PROPERTIES

Softening Point: -194°F (-90°C), variesVapor Pressure: 1.5 psia (77.8 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)Boiling Point: $>696^{\circ}\text{F}$ ($>370^{\circ}\text{C}$), varies2.5 psia (129 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)Density (Spec. Gravity) at 68°F (20°C): 7.5-9.2 lbs/gal (0.9-1.1)11.0 psia (569 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)Kinematic Viscosity, at 77°F (25°C): SSU (cSt)at 68°F (20°C) Negl. psia (negl. mm. Hg)at $^{\circ}\text{F}$ ($^{\circ}\text{C}$): SSU (cSt)

Solubility in Water, %: Negligible

Specific heat, Btu/lb. $^{\circ}\text{F}$ (cal/g $^{\circ}\text{C}$): 0.48

Solubility of Water in Commodity, %:

Coefficient of Thermal Expansion: per $^{\circ}\text{F}$
per $^{\circ}\text{C}$

3. HAZARD DATA

Flashpoint: $50-400^{\circ}\text{F}$ ($16-204^{\circ}\text{C}$) CC, depending on grade

Flammability Limits in Air, Volume %:

Autoignition Temperature: 500°F (482°C)

Threshold Limit Value (TLV), ppm: 5 mg/cu.m.

Short-Term Inhalation Limits:

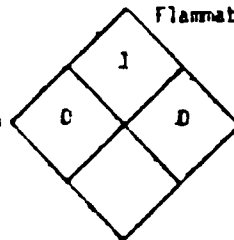
Dose Threshold, ppm:

NFPA
Hazard
Classification

Flammability

Health

Reactivity



4. HAZARD ACTION

FIRE

Combustible (some grades may be flammable).
Extinguish with carbon dioxide, dry chemical, or foam. Water may cause frothing.
Cool exposed containers with water.

EXPOSURE

HARM

ACTION

INHALED

Slightly irritating to nose, throat and eyes.
Fumes of hot asphalt may cause nausea and
dizziness.

Move to fresh air.

SWALLOWED

Harmful if swallowed.
Ingestion will cause irritation of intestinal
tract.

Induce vomiting by giving an emetic such as
warm salt water or mustard water.

ON SKIN

Slightly irritating to skin.
Contact with hot liquid will cause heat
blisters and burns.

Remove contaminated clothing.
Wash affected areas with soap and water.
Laundry contaminated clothing before reuse.
Get medical attention for burns.

IN EYES

Irritating to eyes.
Hot liquid can cause eye burns.

Flush eyes with water for 15 minutes.
Get medical attention.

039

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
 Avoid prolonged breathing of fumes.
 Avoid contact with skin.
 Wear goggles or face shield and impervious gloves.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Allow to cool and solidify; then remove mechanically.
 Absorb residual by sand or dirt and haul away.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible
 Aluminum - compatible
 Brass - compatible
 Stainless Steel - compatible
 Compatibility Chart No.

b. Preferred Materials for:

Tanks - steel
 Pipes - steel
 Pumps - all-iron or bronze fitted,
 heavy duty gear
 Hoses - Viton; Buna-N
 JM-60
 Gaskets -

9. STORAGE CONSIDERATIONS

Venting: Std. return bend.
 handled at elevated temperatures. heat coiled and/or insulated tanks and heat-traced piping and pumps will be required.
 handling temperature depends on grade handled; check with customer (normally in the 300°F to 400°F range).
 API 650 tanks are generally used insulated with "High" temperature glass - blankets and weather barrier.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-7 or CP-8

Empty tank, use detergents or caustic solution, remove condensate and oil.

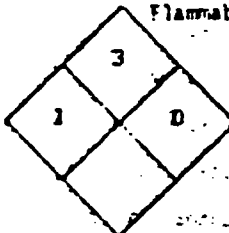
Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY <div style="text-align: center; font-size: 2em; font-weight: bold; margin-top: 10px;">GASOLINE, AUTOMOTIVE</div>		SIGNAL WORD <div style="text-align: center; font-weight: bold; margin-top: 10px;">CAUTION</div>
COMMON SYNONYMS AND TRADE NAMES Petrol- Motor spirit	DESCRIPTION Watery, colorless to pale brown or pink liquid. Gasoline odor. Floats on water.	CHEMICAL FORMULA Mixture of Hydrocarbons MOLECULAR WEIGHT

2. PHYSICAL PROPERTIES

Freezing Point: -50°F (-45°C)	Vapor Pressure: 1.5 psia (77.8 mm Hg) @ -5°F (-15°C)
Boiling Point: $140 - 390^{\circ}\text{F}$ ($60 - 199^{\circ}\text{C}$)	2.5 psia (129 mm Hg) @ 35°F (-9°C)
Density (Spec. Gravity) at 68°F (20°C): 6.2 lbs/gal (0.71 - 0.75)	11.0 psia (569 mm Hg) @ 91°F (33°C)
Kinematic Viscosity, at 77°F (25°C): SSV 31 (1.5 cSt)	at 68°F (20°C) 7.6 psia (393 mm Hg)
at $^{\circ}\text{F}$ ($^{\circ}\text{C}$): SSV (cSt)	Solubility in Water, %: Insoluble
Specific Heat, Btu/lb. $^{\circ}\text{F}$ (cal/g $^{\circ}\text{C}$): 0.525	Solubility of Water in Commodity, %: Insoluble
Coefficient of Thermal Expansion: per $^{\circ}\text{F}$ 0.00070 per $^{\circ}\text{C}$ 0.00127	

3. HAZARD DATA Flashpoint: -36°F (-38°C) CC Flammability Limits in Air, Volume %: 1.4 - 7.4 Autoignition Temperature: 495°F (257°C) Threshold Limit Value (TLV), ppm: 500 Short-Term Inhalation Limits: 500 ppm for 30 minutes Odor Threshold, ppm: 0.25	NFPA Hazard Classification  <div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Health Flammability Reactivity </div>
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4. HAZARD ACTION

FIRE	Extremely flammable. May be ignited by heat, sparks, or open flame. May explode if ignited in an enclosed area. Vapor is heavier than air and flashback along vapor trail may occur. Partially filled containers may explode in fire. Extinguish with foam, dry chemicals, or carbon dioxide. Cool exposed containers with water.
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	HARM	ACTION
EXPOSURE	INHALED	Irritating to eyes, nose and throat. Exposures to low concentrations or for short time has little effect. High concentrations will cause dizziness, headache, anesthesia, coma, and respiratory arrest. Liquid in lungs will cause pulmonary edema.
	SWALLOWED	Harmful if swallowed. Irritation of mouth, esophagus and stomach; vomiting, diarrhea; symptoms as inhaled. Between one ounce and a pint may cause death.
	ON SKIN	Irritating to skin on long exposure.
	IN EYES	Irritating to eyes.

0-4-1

GASOLINE, AUTOMOTIVE

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield and impervious gloves.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Apply foam or fine water spray to minimize vapor formation.
Pump off spilled material to confinement at separator.
Residual will evaporate in a few hours; however, adequate precautions should be taken to prevent possible ignition of the vapor.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - Compatible
Aluminum - Compatible
Brass - Compatible
Stainless Steel - Compatible

Compatibility Chart No. 9

Rubber hoses are attacked and unsuitable.

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - Buna-N; Polyethylene crosslinked
less resistant
Gaskets - JM-80

9. STORAGE CONSIDERATIONS

Because of vapor pressure considerations, most states will require an internal floating roof or an open top floater. Leaded gasolines require additional precautions in handling and cleaning to avoid the toxic effects of organic lead compounds present.

10. LABELING REQUIREMENTS

Flammable liquid.

11. CLEANING PROCEDURES

CP-2

Drain tank, gasfree mechanically and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Various grades of gasoline will behave similarly; however, their volatility and vapor pressures may vary depending on blends used for geographical and seasonal considerations. Data presented are averages for gasolines. Most States will preclude by regulation floaters for material exceeding 11 psia vapor pressure at highest ambient. Tank car or tank truck vapor displacement must be controlled in most states. Viable control techniques involve bottom loading, incineration, vapor recovery, forced return to storage, adsorption and absorption. EPA administrators generally accept 90% reduction of uncontrolled emissions.

1. COMMODITY		o-XYLENE		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Xylol 1,2 Dimethylbenzene		DESCRIPTION Colorless watery liquid. Sweet, characteristic aromatic odor. Floats on water		CHEMICAL FORMULA $\text{o-C}_6\text{H}_4(\text{CH}_3)_2$	
				MOLECULAR WEIGHT 106.16	
2. PHYSICAL PROPERTIES					
Freezing Point: -13°F (-25°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 167°F (75°C)			
Boiling Point: 292°F (144°C)		2.5 psia (129 mm Hg) @ $^\circ\text{F}$ ($^\circ\text{C}$)			
Density (Spec. Gravity) at 68°F (20°C): 7.3 lbs/gal (0.880)		11.0 psia (569 mm Hg) @ $^\circ\text{F}$ ($^\circ\text{C}$)			
Kinematic Viscosity, at 77°F (25°C): SSU 26 (0.85 cSt)		at 68°F (20°C) 0.1 psia (5 mm Hg)			
at 54°F (12°C): SSU 29 (0.95 cSt)		Solubility in Water, %: 0.01			
Specific Heat, Btu/lb. $^\circ\text{F}$ (cal/g $^\circ\text{C}$): 0.41		Solubility of Water in Commodity, %: 0.03			
Coefficient of Thermal Expansion: per $^\circ\text{F}$ 0.000485 per $^\circ\text{C}$ 0.000873					
3. HAZARD DATA					
Flashpoint: 63°F (17°C) CC 75°F (24°C) CC					
Flammability Limits in Air, Volume %: 1.1 - 7.0					
Autoignition Temperature: 869°F (465°C)					
Threshold Limit Value (TLV), ppm: 100					
Short-Term Inhalation Limits: 300 ppm for 30 minutes					
Governing Threshold, ppm: 0.5					
<div style="display: flex; justify-content: space-between; align-items: center;"> <div> <p>NFPA Hazard Classification</p> </div> <div style="text-align: center;"> </div> <div> <p>Flammability</p> <p>Health</p> <p>Reactivity</p> </div> </div>					
4. HAZARD ACTION					
FIRE		Flammable. May be ignited by open flame, sparks, or heat. Vapor is heavier than air and flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with foam, dry chemical, or carbon dioxide. Direct water stream may be ineffective. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
		INHALED	Vapor irritating to nose, throat and eyes. If inhaled for prolonged period or at high concentrations will cause headache, confusion, dizziness, drowsiness, narcosis and may cause liver and kidney damage.	Move to fresh air. If breathing is difficult, ... If breathing stops, apply artificial respiration. Get medical attention if not noticed.	
		SWALLOWED	Harmful if swallowed. Ingestion will cause vomiting, giddiness, abdominal pain, loss of consciousness. May cause liver and kidney damage. Less than 1 oz. may cause death.	Do NOT induce vomiting. Have victim drink milk or water. Get medical attention.	
		ON SKIN	Irritating to skin.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.	
		IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.	

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
 Avoid prolonged breathing of vapor.
 Avoid prolonged contact with skin.
 Keep containers closed and away from heat, sparks and open flame.
 Wear goggles or face shield and impervious gloves.
 Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
 Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Use water fog nozzles to hold down vapor.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Use foam to minimize vaporization.
 Pump off spilled material to containment at separator.
 Residue should be absorbed by vermiculite or other absorbent material, placed into closed containers, and transported away for final disposition.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - Compatible
 Aluminum - Compatible
 Brass - Compatible
 Stainless Steel - Compatible

Compatibility Chart No. 10

Compatible with the usual construction materials. Attacks natural rubber.

b. Preferred Materials for:

Tanks - steel
 Pipes - steel
 Pumps - all iron or bronze fitted
 Hoses - Polyethylene crosslinked;
 Viton
 Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.

10. LABELING REQUIREMENTS

Flammable liquid

11. CLEANING PROCEDURES

= CP-9

Drain all residual material, steam clean; then remove the condensate and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		m-XYLENE		SIGNAL WORD CAUTION																
COMMON SYNONYMS AND TRADE NAMES Xylol 1,3-Dimethylbenzene		DESCRIPTION Colorless watery liquid. Sweet, characteristic aromatic odor. Floats on water.		CHEMICAL FORMULA $m-C_6H_4(CH_3)_2$																
				MOLECULAR WEIGHT 106.16																
2. PHYSICAL PROPERTIES																				
Freezing Point: $-54^{\circ}F$ ($-48^{\circ}C$)		Vapor Pressure: 1.5 psia (77.8 mm. Hg) @ $158^{\circ}F$ ($70^{\circ}C$)																		
Boiling Point: $262^{\circ}F$ ($139^{\circ}C$)		2.5 psia (129 mm. Hg) @ $^{\circ}F$ ($^{\circ}C$)																		
Density (Spec. Gravity) at $68^{\circ}F$ ($20^{\circ}C$): 7.2 lbs/gal 0.864		11.0 psia (569 mm. Hg) @ $^{\circ}F$ ($^{\circ}C$)																		
Kinematic Viscosity, at $77^{\circ}F$ ($25^{\circ}C$): SSU 27 (0.67 cSt)		at $68^{\circ}F$ ($20^{\circ}C$) 0.12 psia (6.0 mm. Hg)																		
at $64^{\circ}F$ ($12^{\circ}C$): SSU 28 (0.71 cSt)		Solubility in Water, %: 0.01																		
Specific heat, Btu/lb. $^{\circ}F$ (cal/g $^{\circ}C$) 0.41		Solubility of Water in Commodity, %: 0.03																		
Coefficient of Thermal Expansion: per $^{\circ}F$ 0.000494 per $^{\circ}C$ 0.000889																				
3. HAZARD DATA		NFPA Hazard Classification																		
Flashpoint: $77^{\circ}F$ ($25^{\circ}C$)																				
Flammability Limits in Air, Volume %: 1.1 - 6.4																				
Autoignition Temperature: $986^{\circ}F$ ($530^{\circ}C$)																				
Threshold Limit Value (TLV), ppm: 100																				
Short-Term Inhalation Limits: 300 ppm for 30 minutes																				
Odor Threshold, ppm: 0.5																				
4. HAZARD ACTION																				
FIRE		Flammable. May be ignited by open flame, sparks, or heat. Vapor is heavier than air and flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with foam, dry chemical, or carbon dioxide. Direct water stream may be ineffective. Cool exposed containers with water.																		
EXPOSURE		<table border="1"> <thead> <tr> <th></th> <th>HARM</th> <th>ACTION</th> </tr> </thead> <tbody> <tr> <td>INHALED</td> <td>Vapor irritating to nose, throat and eyes. If inhaled for prolonged period or at high concentrations will cause headache, confusion, dizziness, drowsiness, narcosis and may cause liver and kidney damage.</td> <td>Move to fresh air. If breathing is difficult, stop. If breathing stops, apply artificial respiration. Get medical attention if not noticed.</td> </tr> <tr> <td>SWALLOWED</td> <td>Harmful if swallowed. Ingestion will cause vomiting, giddiness, abdominal pain, loss of consciousness. May cause liver and kidney damage. Less than 1 oz. may cause death.</td> <td>Do NOT induce vomiting. Have victim drink milk or water. Get medical attention.</td> </tr> <tr> <td>ON SKIN</td> <td>Irritating to skin.</td> <td>Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.</td> </tr> <tr> <td>IN EYES</td> <td>Irritating to eyes.</td> <td>Flush eyes with water for 15 minutes. Get medical attention.</td> </tr> </tbody> </table>					HARM	ACTION	INHALED	Vapor irritating to nose, throat and eyes. If inhaled for prolonged period or at high concentrations will cause headache, confusion, dizziness, drowsiness, narcosis and may cause liver and kidney damage.	Move to fresh air. If breathing is difficult, stop. If breathing stops, apply artificial respiration. Get medical attention if not noticed.	SWALLOWED	Harmful if swallowed. Ingestion will cause vomiting, giddiness, abdominal pain, loss of consciousness. May cause liver and kidney damage. Less than 1 oz. may cause death.	Do NOT induce vomiting. Have victim drink milk or water. Get medical attention.	ON SKIN	Irritating to skin.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.	IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.
	HARM	ACTION																		
INHALED	Vapor irritating to nose, throat and eyes. If inhaled for prolonged period or at high concentrations will cause headache, confusion, dizziness, drowsiness, narcosis and may cause liver and kidney damage.	Move to fresh air. If breathing is difficult, stop. If breathing stops, apply artificial respiration. Get medical attention if not noticed.																		
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ON SKIN	Irritating to skin.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.																		
IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.																		

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield and impervious gloves.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Use foam to minimize vaporization.
Pump off spilled material to containment at separator.
Residue should be absorbed by Vermiculite or other absorbant material, placed into closed containers, and transported away for final disposition.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - Compatible
Aluminum - Compatible
Brass - Compatible
Stainless Steel - Compatible

Compatibility Chart No. 10

Compatible with the usual construction materials. Attacks natural rubber.

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all iron or bronze fitted
Hoses - Polyethylene crosslinked; Viton
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.

10. LABELING REQUIREMENTS

Flammable liquid.

11. CLEANING PROCEDURES

CP-9 or CP-7

Drain all residual material, steam clean; then remove the condensate and dry; or wash with a detergent solution.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		p-XYLENE		SIGNAL WORD: CAUTION	
COMMON SYNONYMS AND TRADE NAMES Xylol 1,4 Dimethylbenzene		DESCRIPTION Colorless watery liquid. Sweet, characteristic aromatic odor. Floats on water.		CHEMICAL FORMULA $p-C_6H_4(CH_3)_2$	
				MOLECULAR WEIGHT 106.16	
2. PHYSICAL PROPERTIES					
Freezing Point: 56 °F (13 °C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 158°F (70 °C)			
Boiling Point: 281 °F (138 °C)		2.5 psia (129 mm Hg) @ °F (°C)			
Density (Spec. Gravity) at 68°F (20°C): 7.2 lbs/gal (0.851)		11.0 psia (569 mm Hg) @ °F (°C)			
Kinematic Viscosity, at 77°F (25°C): SSU 28 (0.70cSt)		at 68°F (20°C) 0.13 psia (6.7 mm Hg)			
at °F (°C): SSU 28.5(0.80 cSt)		Solubility in Water, 1: insoluble			
Specific Heat, Btu/lb. °F (cal/g °C): 0.42		Solubility of Water in Commodity, 1:			
Coefficient of Thermal Expansion: per °F 0.000543					
per °C 0.000977					
3. HAZARD DATA					
Flashpoint: 61 °F (27 °C) CC		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume 1: 1.1 - 6.6				Health	
Autoignition Temperature: 870 °F (466 °C)				Reactivity	
Threshold Limit Value (TLV), ppm: 100					
Short-Term Inhalation Limits: 300 ppm for 30 minutes					
Skin Threshold, ppm: 0.5					
4. HAZARD ACTION					
FIRE		Flammable. May be ignited by open flame, sparks, or heat. Vapor is heavier than air and flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with foam, dry chemical, or carbon dioxide. Direct water stream may be ineffective. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Vapor irritating to nose, throat and eyes. If inhaled for prolonged period or at high concentrations will cause headache, confusion, dizziness, drowsiness, narcosis and may cause liver and kidney damage.		Move to fresh air. If breathing is difficult, ... If breathing stops, apply artificial respiration. Get medical attention if noticed.	
SWALLOWED		Harmful if swallowed. Ingestion will cause vomiting, giddiness, abdominal pain, loss of consciousness. May cause liver and kidney damage. Less than 1 oz. may cause death.		Do NOT induce vomiting. Have victim drink milk or water. Get medical attention.	
ON SKIN		Irritating to skin.		Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.	
IN EYES		Irritating to eyes.		Flush eyes with water for 15 minutes. Get medical attention.	

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
 Avoid prolonged breathing of vapor.
 Avoid prolonged contact with skin.
 Keep containers closed and away from heat, sparks and open flame.
 Wear goggles or face shield and impervious gloves.
 Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
 Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Use water fog nozzles to hold down vapor.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Use foam to minimize vaporization.
 Pump off spilled material to containment at separator.
 Residues should be absorbed by Vermiculite or other absorbent material, placed into closed containers, and transported away for final disposition.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - Compatible
 Aluminum - Compatible
 Brass - Compatible
 Stainless Steel - Compatible

Compatibility Chart No. 10

Compatible with the usual construction materials. Attacks natural rubber.

b. Preferred Materials for:

Tanks - steel
 Pipes - steel
 Pumps - all iron or bronze fittings
 Hoses - Polyethylene crosslinked:
 Viton
 Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.
 Because of its high freezing point, pipeline and pump heat tracing and tank heating coils and/or insulation will be required.

10. LABELING REQUIREMENTS

Flammable liquid

11. CLEANING PROCEDURES

CP-9 or CP-7

Drain all residual material. Steam clean; then remove the condensate and air dry; or wash with a detergent solution.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		V. M. & P. NAPHTHA		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Petroleum solvent Light naphtha Ligroin Fainier's naphtha Benzine 75: Naphtha Succle Naphtholite		DESCRIPTION Colorless liquid Gasoline-like odor Floats on water		CHEMICAL FORMULA Mixture of hydrocarbons	
				MOLECULAR WEIGHT Mixture	
2. PHYSICAL PROPERTIES					
Freezing Point: Below -50 F (below -46 C)		Vapor Pressure: 1.5 psia (77.6 mm Hg) @ 105°F (41 °C)			
Boiling Point: 200-300 F (93-149 C)		2.5 psia (129 mm Hg) @ °F (°C)			
Density (Spec. Gravity) at 68°F (20°C): 5.6-7.26 lbs/gal (0.67-0.87)		11.0 psia (569 mm Hg) @ °F (°C)			
Kinematic Viscosity, at 77°F (25°C): SSU 46 (6 cSt)		at 68°F (20°C) 0.5 psia (26 mm Hg)			
at °F (°C): SSU (cSt)		Solubility in Water, 1: Insoluble			
Specific Heat, Btu/lb. °F (cal/g °C): 0.4E		Solubility of Water in Commodity, 1: Insoluble			
Coefficient of Thermal Expansion: per °F per °C					
3. HAZARD DATA					
Flashpoint: 20-45°F (-7 to 7°C) CC		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume 1: 0.9-6.1				Reactivity	
Autoignition Temperature: 450 °F (232°C)					
Threshold Limit Value (TLV), ppm: 500 (est.)					
Short-Term Inhalation Limits: 500 ppm for 30 minutes					
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Very flammable. May be ignited by heat, sparks, or open flame. May explode if ignited in an enclosed area. Vapor is heavier than air and flash back along vapor trail may occur. Partially filled containers may explode in fire. Extinguish with foam, dry chemicals, or carbon dioxide. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Slightly irritating to eyes, nose and throat. Exposures to low concentrations or for short time has little effect. High concentrations will cause dizziness, headache, anesthesia, coma, and respiratory arrest. Liquid in lungs will cause pulmonary edema.		Move to fresh air. If breathing is difficult, stop. If breathing has stopped, administer respiration. If liquid in lungs, get medical attention immediately.	
SWALLOWED		Harmful if swallowed. Irritation of mouth, esophagus and stomach; vomiting, diarrhea; symptoms as inhaled. Between one ounce and a pint may cause death.		DO NOT INDUCE VOMITING. Have victim drink milk or water. If appreciable quantity swallowed get medical attention and stomach pumped.	
ON SKIN		Slightly irritating to skin on long exposure.		Remove contaminated clothing. Wash affected areas with soap and water.	
IN EYES		Irritating to eyes.		Flush eyes with water for 15 minutes. Get medical attention.	

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield and impervious gloves.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Apply foam or fine water spray to minimize vapor formation.
Pump off spilled material to containment at separator.
Absorb residual by Vermiculite or other dry absorber, transfer to closed containers, and transport for final disposition.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible

Compatibility Chart No. 9

Rubber hoses are attacked and unsuitable.

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - Buna-N; Polyethylene crosslinked
Viton
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vents are required on fixed roof tanks.

10. LABELING REQUIREMENTS

11. CLEANING PROCEDURES

CP-7 or CP-9

Drain tank, wash with a detergent solution or steam, remove condensate, and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Various grades of V M & P Naphtha will behave similarly; however, their volatilities, densities and flash points may vary depending on blends used.

1. COMMODITY		TOLUENE		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Toluol Methylbenzene Methylbenzol Phenylmethane		DESCRIPTION Colorless liquid Pleasant odor Floats on water Flammable		CHEMICAL FORMULA $C_6H_5CH_3$ MOLECULAR WEIGHT 92.14	
2. PHYSICAL PROPERTIES					
Freezing Point: $-139^{\circ}F (-95.0^{\circ}C)$		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ $115^{\circ}F (46^{\circ}C)$			
Boiling Point: $231^{\circ}F (111^{\circ}C)$		2.5 psia (129 mm Hg) @ $^{\circ}F (^{\circ}C)$			
Density (Spec. Gravity) at $68^{\circ}F (20^{\circ}C)$: 7.2 lbs/gal (0.867)		11.0 psia (569 mm Hg) @ $^{\circ}F (^{\circ}C)$			
Kinematic Viscosity, at $77^{\circ}F (25^{\circ}C)$: SSU 26 (.63 cSt)		at $68^{\circ}F (20^{\circ}C)$: .45 psia (23 mm Hg)			
at $^{\circ}F (^{\circ}C)$: SSU					
Specific Heat: 0.440 Btu/lb. $^{\circ}F$ (0.440 cal/g. $^{\circ}C$)		Solubility in Water, %: 0.15			
Coefficient of Thermal Expansion: 0.000574 per $^{\circ}F$		Solubility of Water in Commodity, %: 0.05			
0.00103 per $^{\circ}C$					
3. HAZARD DATA					
Flashpoint: $40^{\circ}F (4.4^{\circ}C)$ C.C.		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %: 1.3 - 7.0				Health	
Autoignition Temperature: $997^{\circ}F (536^{\circ}C)$				Reactivity	
Threshold Limit Value (TLV): 200					
Short-Term Inhalation Limits: 600 ppm. for 30 min					
Skin Threshold, ppm: 5					
4. HAZARD ACTION					
FIRE		Flammable. Flashback may occur along vapor trail. Vapor is heavier than air; thus, may travel on the ground. Vapor may explode if ignited in an enclosed area. Extinguish with dry chemicals, foam, or carbon dioxide. Because of splashing, direct water is ineffective on fire. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Vapor irritating to nose, throat and eyes. If inhaled for prolonged period or at high concentrations will cause nausea, vomiting, depressed respiration, loss of consciousness.		Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, apply artificial respiration. Get medical attention immediately if all effects noticed.	
SWALLOWED		Harmful if swallowed. Nausea, vomiting, diarrhea, depressed respiration. Between 1 oz. and 1 pint may cause death.		DO NOT induce vomiting. Have victim drink water or milk. Get medical attention.	
ON SKIN		Causes drying and irritation of skin.		Remove contaminated clothing. Wash affected areas with soap and water.	
IN EYES		Irritates eyes; can cause corneal burns.		Flush with water for 15 min. Get medical attention.	

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield and impervious gloves.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Cover with foam to reduce vaporization.
Pump to containment at separator.
Absorb residual by Vermiculite or other solid absorber, load into closed containers and transport away for final disposal.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - Compatible
Aluminum - Compatible
Brass - Compatible
Stainless Steel - Compatible

Compatibility Chart No. 10

Compatible with most construction materials; but attacks rubber.

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all iron or bronze fitted
Hoses - Polyethylene crosslinked; Viton.
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent mandatory on fixed roof tanks.

10. LABELING REQUIREMENTS

Flammable liquid

11. CLEANING PROCEDURES

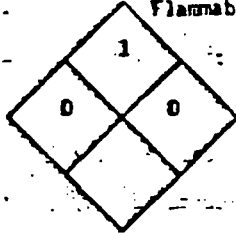
CP-9 or CP-7

Drain all residual material.
Steam clean tank; then remove the condensate and air dry.
Or wash with a detergent solution.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Toluene vapors are more toxic than comparable hydrocarbons, and prolonged inhalation should be avoided.

1. COMMODITY		SIGNAL WORD ATTENTION	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION Oily, golden yellow liquid Very slight odor Floats on water	CHEMICAL FORMULA Mixture
			MOLECULAR WEIGHT Mixture
2. PHYSICAL PROPERTIES			
Freezing Point: Above 0°F (-18°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 70°F (21°C)	
Boiling Point: About 600°F (316°C)		2.5 psia (129 mm Hg) @ 70°F (21°C)	
Density (Spec. Gravity) at 68°F (20°C): 7.72 lbs/gal (0.925)		11.0 psia (569 mm Hg) @ 70°F (21°C)	
Kinematic Viscosity, at 77°F (25°C): 55 (cSt)		at 68°F (20°C) 0.1 psia (<5 mm Hg)	
at 77°F (25°C): 55 (cSt)		Solubility in Water, %: Negligible	
Specific Heat, Btu/lb. °F (cal/g °C):		Solubility of Water in Commodity, %: Negligible	
Coefficient of Thermal Expansion: per °F			
per °C			
3. HAZARD DATA		NFPA Hazard Classification  Flammability 1 Health 0 Reactivity 0	
Flashpoint: Above 200°F (Above 93°C) EC			
Flammability Limits in Air, Volume %: Not established			
Autoignition Temperature: °F (°C):			
Threshold Limit Value (TLV), ppm: Not established			
Short-Term Inhalation Limits:			
Odor Threshold, ppm:			
4. HAZARD ACTION			
FIRE	Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.		
EXPOSURE	HARM		ACTION
	INHALED	Because of low vapor pressure, no harm at normal temperatures.	
	SWALLOWED	None; edible	
	ON SKIN	Cold, none. Heated product may cause heat burns and blisters.	
	IN EYES	May irritate eyes.	055 Flush with water for 15 minutes.

5. PROTECTIVE MEASURES IN HANDLING S-O

Have adequate ventilation.
Keep containers closed and away from heat.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
Absorb residual by Vermiculite or other solid absorbent and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible

Compatibility Chart No. 33

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - Polyethylene crosslinked; Butyl
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.
Heating may be required in colder regions to make the product pumpable; thus heat coiled and/or insulated tanks and heat-traced piping and pumps will be required.
Avoid overheating.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-7

Drain tank, wash with a detergent solution and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

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1. COMMODITY		SIGNAL WORD	
<h1>ODORLESS SOLVENT</h1>		CAUTION	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION	CHEMICAL FORMULA
Odorless mineral spirits		Colorless liquid Gasoline-like odor Floats on water	Mixture
			MOLECULAR WEIGHT
			Mixture
2. PHYSICAL PROPERTIES			
Freezing Point: -85°F (-65°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)	
Boiling Point: $358-470^{\circ}\text{F}$ ($181-243^{\circ}\text{C}$)		2.5 psia (129 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)	
Density (Spec. Gravity) at 68°F (20°C): 6.35-6.42 lbs/gal (0.76-0.77)		11.0 psia (569 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)	
Kinematic Viscosity, at 77°F (25°C): SSU (cSt)		at 68°F (20°C) 0.02 psia (1.1 mm Hg)	
at 100°F (38°C): SSU 30-33 (1.4-2.0 cSt)		Solubility in Water, %: Insoluble	
Specific Heat, Btu/lb. $^{\circ}\text{F}$ (cal/g $^{\circ}\text{C}$):		Solubility of Water in Commodity, %: Insoluble	
Coefficient of Thermal Expansion: per $^{\circ}\text{F}$ per $^{\circ}\text{C}$			
3. HAZARD DATA		NFPA Hazard Classification (Estimated)	
Flashpoint: $130-155^{\circ}\text{F}$ ($54-68^{\circ}\text{C}$) CC			
Flammability Limits in Air, Volume %: 1-6, estimated			
Autoignition Temperature: $^{\circ}\text{F}$ ($^{\circ}\text{C}$)			
Threshold Limit Value (TLV), ppm: estimated 500			
Short-Term Inhalation Limits:			
Odor Threshold, ppm:			
4. HAZARD ACTION			
FIRE	Combustible. Partially filled containers may explode in fire. Extinguish fire with foam, dry chemical, or carbon dioxide. Cool exposed containers with water.		
EXPOSURE	HARM		ACTION
	INHALED	Irritation of eyes, nose, and throat if present in high concentrations; also headache and slight dizziness. Liquid in lungs will cause rapidly developing pulmonary edema.	Move to fresh air. If liquid gets into lungs, get medical attention immediately.
	SWALLOWED	Harmful if swallowed. Will cause nausea, vomiting, cramps, depression of central nervous system up to coma and even death; also possible kidney and liver damage. About one pint will cause death.	DO NOT INDUCE VOMITING. Give milk or water. Get medical attention.
	ON SKIN	Slightly irritating on long exposure. Solvent action may remove natural oils.	Remove contaminated clothing. Wipe off and wash affected areas with oil and water.
	IN EYES	Irritation of eyes.	057 Flush with water for 15 minutes. Get medical attention.

5. PROTECTIVE MEASURES IN HANDLING - S-2

Have adequate ventilation.
 Avoid prolonged breathing of vapor.
 Avoid prolonged contact with skin.
 Keep containers closed and away from heat, sparks and open flame.
 Wear goggles or face shield and impervious gloves.
 Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
 Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
 Absorb residual by Vermiculite or other solid absorber, transfer into closed containers and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - compatible
 Aluminum - compatible
 Brass - compatible
 Stainless Steel - compatible

Compatibility Chart No. 9

Compatible with all construction materials.

b. Preferred Materials for:

Tanks - steel
 Pipes - steel
 Pumps - all-iron, centrifugal or bronze fitted
 Hoses - Polyethylene crosslinked; Viton
 Buna-N; butyl
 Gaskets - JM-50

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks. Return bends normally acceptable.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, steam, remove condensate and air dry; or wash with a detergent solution.

CP-9 or CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Odorless solvent is a mixture of paraffins and naphthenes in various proportions; check with manufacturer for specific vapor pressure data.

1. COMMODITY		METHYL ALCOHOL		SIGNAL WORD CAUTION																
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION		CHEMICAL FORMULA																
Methanol Wood Alcohol Wood Spirit Wood Naphtha Carbinol Columbian Spirit		Methyl Hydroxide Colorless liquid Alcohol odor Mixes with water Flammable		<chem>CH3OH</chem>																
				MOLECULAR WEIGHT 32.04																
2. PHYSICAL PROPERTIES																				
Freezing Point: -144 °F (-97.8 °C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 61 °F (17 °C)																		
Boiling Point: 148 °F (64.5 °C)		2.5 psia (129 mm Hg) @ 79 °F (26 °C)																		
Density (Spec. Gravity) at 68 °F (20 °C): 6.6 lb./gal (0.792)		11.0 psia (569 mm Hg) @ 136 °F (58 °C)																		
Kinematic Viscosity, at 77 °F (25 °C): SSU 28 (.77 cSt)		at 68 °F (20 °C): 1.86 psia (96 mm Hg)																		
at °F (°C): SSU																				
Specific Heat: 0.599 Btu/lb. °F (0.599 cal/g. °C)		Solubility in Water, %: Miscible in all proportions																		
Coefficient of Thermal Expansion: 0.000667 per °F		Solubility of Water in Commodity, %: Miscible in all proportions																		
0.00120 per °C																				
3. HAZARD DATA																				
Flashpoint: 54 °F (12 °C)		NFPA Hazard Classification																		
Flammability Limits in Air, Volume %: 6.5 - 36.5																				
Autoignition Temperature: 878 °F (470 °C)																				
Threshold Limit Value (TLV): 200																				
Short-Term Inhalation Limits: Data not available																				
Irritation Threshold, ppm: 100																				
4. HAZARD ACTION																				
FIRE		Flammable May be ignited by sparks, heat, or open flame. Vapor may explode if ignited in an enclosed area. Flashback along vapor trail may occur. Extinguish with water spray dry chemicals, alcohol foam, or carbon dioxide. Cool exposed containers with water.																		
EXPOSURE		<table border="1"> <thead> <tr> <th></th> <th>HARM</th> <th>ACTION</th> </tr> </thead> <tbody> <tr> <td>INHALED</td> <td>Irritation eyes, nose, throat. Will cause headaches, fatigue, difficult breathing, or loss of consciousness. Inhalation of large amounts may cause partial or total blindness or death.</td> <td>Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.</td> </tr> <tr> <td>SWALLOWED</td> <td>Harmful if swallowed. Similar to inhaled; also, redness or blueness of the face, abdominal pain, stupor, disturbance of vision, unconsciousness. About one-half pint taken internally may cause death.</td> <td>If conscious, have victim drink water and induce vomiting. If unconscious, do nothing except keep warm. Get prompt medical attention.</td> </tr> <tr> <td>ON SKIN</td> <td>Irritation of skin. May be absorbed through skin to give symptoms as inhaled.</td> <td>Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.</td> </tr> <tr> <td>IN EYES</td> <td>Irritates the eyes.</td> <td>Flush eyes freely with water for about 15 minutes.</td> </tr> </tbody> </table>					HARM	ACTION	INHALED	Irritation eyes, nose, throat. Will cause headaches, fatigue, difficult breathing, or loss of consciousness. Inhalation of large amounts may cause partial or total blindness or death.	Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.	SWALLOWED	Harmful if swallowed. Similar to inhaled; also, redness or blueness of the face, abdominal pain, stupor, disturbance of vision, unconsciousness. About one-half pint taken internally may cause death.	If conscious, have victim drink water and induce vomiting. If unconscious, do nothing except keep warm. Get prompt medical attention.	ON SKIN	Irritation of skin. May be absorbed through skin to give symptoms as inhaled.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.	IN EYES	Irritates the eyes.	Flush eyes freely with water for about 15 minutes.
	HARM	ACTION																		
INHALED	Irritation eyes, nose, throat. Will cause headaches, fatigue, difficult breathing, or loss of consciousness. Inhalation of large amounts may cause partial or total blindness or death.	Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.																		
SWALLOWED	Harmful if swallowed. Similar to inhaled; also, redness or blueness of the face, abdominal pain, stupor, disturbance of vision, unconsciousness. About one-half pint taken internally may cause death.	If conscious, have victim drink water and induce vomiting. If unconscious, do nothing except keep warm. Get prompt medical attention.																		
ON SKIN	Irritation of skin. May be absorbed through skin to give symptoms as inhaled.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.																		
IN EYES	Irritates the eyes.	Flush eyes freely with water for about 15 minutes.																		

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield and impervious gloves.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Dangerous to aquatic life in high concentrations.
May be dangerous if it enters water intakes.
Flush with water and pump off diluted material to containment.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel	-	Compatible
Aluminum	-	Conditional
Brass	-	Compatible
Stainless Steel	-	Compatible

Compatibility Chart No. 5
None-corrosive at normal conditions; except aluminum and lead.

b. Preferred Materials for:

Tanks	-	steel
Pipes	-	steel
Pumps	-	all-iron or bronze fitted
Hoses	-	Polyethylene crosslinked; Buna-N; SBR; Viton not suitable
Gaskets	-	JM-60

9. STORAGE CONSIDERATIONS

Storage temperature and atmosphere: ambient
Venting: Std. pressure-vacuum vent mandatory on fixed roof tank.
Because of high vapor pressure, most states will require a floating roof tank.

10. LABELING REQUIREMENTS

Flammable liquid

11. CLEANING PROCEDURES

Drain tank, gasfree mechanically and air dry.

CP-2

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Taken internally, it is a poison and cannot be made non-poisonous by distillation or absorption.
Because of possible delayed reaction, all cases of methanol poisoning should be admitted to hospital for observation.

Product Background



CELANESE CHEMICAL COMPANY, INC. 1250 WEST MOCKINGBIRD LANE DALLAS, TX 75247 PHONE: 214-689-4000

METHANOL

DESCRIPTION

Methanol, also called methyl alcohol and wood alcohol, is a clear, colorless liquid with an alcohol-like odor. It will dissolve in water. Methanol is a flammable liquid. It does not readily react with other materials or itself.

EFFECTS ON PEOPLE

Skin contact with the liquid does not result in irritation; however, skin contact should be avoided since methanol can be absorbed through the skin. Ingestion of the liquid (even in small quantities) can result in blindness or death. Exposure to the vapor will not cause blindness or other serious effects, but will cause drunkenness, nausea, and headaches.

USES

Methyl alcohol is used extensively as an intermediate in producing other chemicals such as acrylates and formaldehyde. It is also used in various resins, gums, shellacs, waxes, and oils.

CAS No. 67-56-1
Rev. 0, 2/80

061

TO THE BEST OF OUR KNOWLEDGE THE INFORMATION CONTAINED HEREIN IS ACCURATE. HOWEVER, NEITHER CELANESE CORPORATION NOR ANY OF ITS AFFILIATES ASSUMES ANY LIABILITY WHATSOEVER FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED HEREIN. FINAL DETERMINATION OF SUITABILITY OF ANY MATERIAL AND WHETHER THERE IS ANY INFRINGEMENT OF PATENTS IS THE SOLE RESPONSIBILITY OF THE USER.

ALL CHEMICALS MAY PRESENT UNKNOWN HEALTH HAZARDS AND SHOULD BE USED WITH CAUTION. ALTHOUGH CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, WE CANNOT GUARANTEE THAT THESE ARE THE ONLY HAZARDS WHICH EXIST. USERS OF ANY CHEMICAL SHOULD SATISFY THEMSELVES BY INDEPENDENT INVESTIGATION OF CURRENT SCIENTIFIC AND MEDICAL KNOWLEDGE THAT THE MATERIAL CAN BE USED SAFELY.

1. COMMODITY		SOYBEAN OIL		SIGNAL WORD ATTENTION	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION Dilky, pale yellow to brownish yellow viscous liquid. Weak characteristic odor Floats on water		CHEMICAL FORMULA Mixture	
				MOLECULAR WEIGHT Mixture	
2. PHYSICAL PROPERTIES					
Freezing Point: 10-19°F (-12 to -7°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 68°F (20°C)			
Boiling Point: above 400°F (above 204°C)		2.7 psia (129 mm Hg) @ 212°F (100°C)			
Density (Spec. Gravity) at 68°F (20°C): 7.7 lbs/gal (0.92-0.93)		11. psia (569 mm Hg) @ 212°F (100°C)			
Kinematic Viscosity, at 77°F (25°C): SSU 4600 (1000cSt)		at 108°F (42°C) <0.1 psia (<5 mm Hg)			
at 50°F (10°C): SSU 16500 (4000cSt)		Solubility in Water, %: Negligible			
Specific Heat, Btu/lb.°F (cal/g °C): approx. 0.48		Solubility of Water in Commodity, %: Negligible			
Coefficient of Thermal Expansion: per °F per °C					
3. HAZARD DATA					
Flashpoint: 540 °F (282 °C) EC		NFPA Hazard Classification			
Flammability Limits in Air, Volume %: Not established					
Autoignition Temperature: 833 °F (445 °C)					
Threshold Limit Value (TLV), ppm: Not established					
Short-Term Inhalation Limits:					
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.			
EXPOSURE	HARM		ACTION		
	INHALED	Because of low vapor pressure, no harm at normal temperatures.			
	SWALLOWED	None; edible			
	ON SKIN	Cold, none. Heated product may cause heat burns and blisters.			
	IN EYES	May irritate eyes.	Flush with water for 15 minutes.		

3. PROTECTIVE MEASURES IN HANDLING S-0

Have adequate ventilation.
Keep containers closed and away from heat.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
Absorb residual by Vermiculite or other solid absorbent and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible
Compatibility Chart No. 13

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - Polyethylene crosslinked; Butyl
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.
Since heating is necessary to make the product pumpable, heat-coiled and/or insulated tanks and heat-traced piping and pumps will be required.
Avoid overheating.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-7

Drain tank, wash with a detergent solution and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		SIGNAL WORD CAUTION	
PETROLEUM NAPHTHA		COMMON SYNONYMS AND TRADE NAMES	DESCRIPTION
		Petroleum ether Benzin Petroleum benzin	Colorless liquid Gasoline-like odor Floats on water
		CHEMICAL FORMULA	
		Mixture	
		MOLECULAR WEIGHT	
		Mixture	
2. PHYSICAL PROPERTIES			
Freezing Point: -99 °F (-73 °C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 68 °F (20 °C)	
Boiling Point: 135-207 °F (60-97 °C)		2.5 psia (129 mm Hg) @ 68 °F (20 °C)	
Density (Spec. Gravity) at 68 °F (20 °C): 5.2-5.8 lbs/gal (0.63-0.69)		11.0 psia (569 mm Hg) @ 68 °F (20 °C)	
Kinematic Viscosity, at 77 °F (25 °C): SSU (cSt)		at 68 °F (20 °C) psia (mm Hg)	
at 68 °F (20 °C): SSU (cSt)		Solubility in Water, %: Insoluble	
Specific Heat, Btu/lb. °F (cal/g °C): 0.48		Solubility of Water in Commodity, %: Insoluble	
Coefficient of Thermal Expansion: per °F 0.00072			
per °C 0.00130			
3. HAZARD DATA			
Flashpoint: <0 °F (<-18 °C) CC		NFPA Hazard Classification	
Flammability Limits in Air, Volume %: 0.9-6.0			
Autoignition Temperature: 550 °F (288 °C)			
Threshold Limit Value (TLV), ppm: 500- depends on percent of aromatics present			
Short-Term Inhalation Limits: Intoxication by 7000 ppm for 5 minutes			
Door Threshold, ppm:			
4. HAZARD ACTION			
FIRE	Very flammable. May be ignited by heat, sparks, or open flame. May explode if ignited in an enclosed area. Vapor is heavier than air and flashback along vapor trail may occur. Partially filled containers may explode in fire. Extinguish with foam, dry chemicals, or carbon dioxide. Cool exposed containers with water.		
EXPOSURE	HARM		ACTION
	INHALED	Slightly irritating to eyes, nose and throat. Exposure to low concentrations or for short time has little effect. High concentrations will cause dizziness, headache, anesthesia, coma, and respiratory arrest. Liquid in lungs will cause pulmonary edema.	Move to fresh air. If breathing is difficult. If breathing has stopped, begin respiration. If liquid in lungs, get medical attention immediately.
	SWALLOWED	Harmful if swallowed. Irritation of mouth, esophagus and stomach; vomiting, diarrhea; symptoms as inhaled. Between one ounce and a pint may cause death.	DO NOT INDUCE VOMITING. Have victim drink milk or water. If appreciable quantity swallowed, get medical attention and stomach lavage.
	ON SKIN	Slightly irritating to skin on long exposure.	Remove contaminated clothing. Wash affected areas with soap and water.
	IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.

PROTECTIVE MEASURES IN HANDLING S-1

Have adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged contact with skin.
Keep containers closed and away from heat, sparks and open flame.
Wear goggles or face shield.
Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Use water fog nozzles to hold down vapor.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Apply foam to minimize vapor formation.
Pump away spilled material to containment at separator.
Absorb residual by Vermiculite or other dry absorbers, transfer to closed containers, and transport for final disposition.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible
Compatibility Chart No. 9

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - Buna-N; Polyethylene crosslinked
Gaskets - JM-50

9. STORAGE CONSIDERATIONS

Because of high vapor pressure at normal storage temperature, open top or internal floating roofs are required in most states and limiting vapor pressure to less than 1.5 psi. for fixed roof tanks.
Venting: Std. pressure-vacuum vent mandatory on fixed roof tanks.

10. LABELING REQUIREMENTS

Flammable liquid.

11. CLEANING PROCEDURES

CP-1 or CP-2

Drain tank, gasfree and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Various grades of petroleum naphtha will behave similarly; however, their boiling points and vapor pressures will vary depending on blends used. Generally, the vapor pressure will exceed 1.5 psia at normal ambient temperatures; for vapor pressure of a given blend, check with customer. Boiling point range is the key. Heptane's boiling range 201°F to 207°F and will have a vapor pressure of 45 mm Hg (0.7 psia) @ 68°F.

065

1. COMMODITY		PALM OIL		SIGNAL WORD ATTENTION	
COMMON SYNONYMS AND TRADE NAMES Palm butter		DESCRIPTION Granular, yellow-orange to dirty-brown fatty mass Characteristic, similar to violets odor Floats on water		CHEMICAL FORMULA Mixture	
				MOLECULAR WEIGHT Mixture	
2. PHYSICAL PROPERTIES					
Freezing Point: 77-109°F (25-43°C)		Vapor Pressure: 1.5 psia (77.2 mm Hg) @ 68°F (20°C)		°F (°C)	
Boiling Point: > 392 °F (>200°C)		2.5 psia (129 mm Hg) @ 68°F (20°C)		°F (°C)	
Density (Spec. Gravity) at 68°F (20°C): 7.6 lbs/gal (0.92)		11.0 psia (569 mm Hg) @ 68°F (20°C)		°F (°C)	
Kinematic Viscosity, at 77°F (25°C): SSU (cSt)		at 68°F (20°C) Negl. psia (negl. mm Hg)			
Specific Heat, Btu/lb. °F (cal/g °C):		Solubility in Water, %: Slight			
Coefficient of Thermal Expansion: per °F		Solubility of Water in Commodity, %: 0.23			
per °C					
3. HAZARD DATA					
Flashpoint: 323 °F (162 °C) CC		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %: Not established				Reactivity	
Autoignition Temperature: 600 °F (316 °C)					
Threshold Limit Value (TLV), ppm: Not established					
Short-Term Inhalation Limits:					
Corrosion Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Because of low vapor pressure, no harm at normal temperatures.			
SWALLOWED		None; edible.			
ON SKIN		Cold, none. Heated product may cause heat burns and blisters.			
IN EYES		May irritate eyes.		066 Flush with water for 15 minutes.	

5. PROTECTIVE MEASURES IN HANDLING S-0

Have adequate ventilation.
Keep containers closed and away from heat.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
Absorb residual by Vermiculite or other solid absorbent and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible

Compatibility Chart No. 33

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - polyethylene crosslinked; Butyl
Baskets - M-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.
Since heating is necessary to make the product pumpable, heat-coiled and/or insulated tanks and heat-traced piping and pumps will be required.
Avoid overheating.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

067

1. COMMODITY		PALM KERNEL OIL		SIGNAL WORD ATTENTION	
COMMON SYNONYMS AND TRADE NAMES Palm Nut Oil		DESCRIPTION Nearly white semi-solid Characteristic odor Floats on water		CHEMICAL FORMULA Mixture	
				MOLECULAR WEIGHT Mixture	
2. PHYSICAL PROPERTIES					
Freezing Point: 79-86 °F (26-30°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 77°F (25°C)			
Boiling Point: Above 392°F (Above 200°C)		2.5 psia (129 mm Hg) @ 100°F (38°C)			
Density (Spec. Gravity) at 68°F (20°C): 7.23 lbs/gal (0.866)		11.0 psia (569 mm Hg) @ 100°F (38°C)			
Kinematic Viscosity, at 77°F (25°C): SSU (cSt)		at 66°F (20°C) <0.7 psia (<5 mm Hg)			
Specific Heat, Btu/lb. °F (cal/g °C):		Solubility in Water, %: Slight			
Coefficient of Thermal Expansion: per °F per °C		Solubility of Water in Commodity, %: Slight			
3. HAZARD DATA					
Flashpoint: 398 °F (203°C) CC		NFPA Hazard Classification			
Flammability Limits in Air, Volume %: Not established		<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> Health <div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto; position: relative;"> <div style="position: absolute; top: 0; right: 0;">Flammability</div> <div style="position: absolute; bottom: 0; right: 0;">Reactivity</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">1</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">0</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">0</div> </div> </div> </div>			
Autoignition Temperature: °F (°C)					
Threshold Limit Value (TLV), ppm: Not established					
Short-Term Inhalation Limits:					
Skin Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
		INHALED	Because of low vapor pressure, no harm at normal temperatures.		
		SWALLOWED	None; edible		
		ON SKIN	Cold, none. Heated product may cause heat burns and blisters.		
		IN EYES	May irritate eyes.	068	Flush with water for 15 minutes

5. PROTECTIVE MEASURES IN HANDLING

Have adequate ventilation.
Keep containers closed and away from heat.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
Absorb residual by vermiculite or other solid absorbent and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible

Compatibility Chart No. 33

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - Polyethylene crosslinked; Butyl
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.
Since heating is necessary to make the product pumpable, heat-coiled and/or insulated tanks and heat-traced piping and pumps will be required.
Avoid overheating.

10. LABELING REQUIREMENTS

None required.

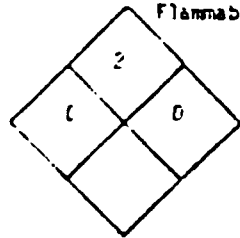
11. CLEANING PROCEDURES

Drain tank; wash with a detergent solution and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		<h1>MINERAL SPIRITS</h1>		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Petroleum Spirits Naphtha Safety Solvent Standard Solvent White Spirit		DESCRIPTION Watery, colorless liquid Gasoline-like odor Floats on water		CHEMICAL FORMULA Mixture of hydrocarbons	
				MOLECULAR WEIGHT	
2. PHYSICAL PROPERTIES					
Freezing Point: Below -50°F (-45°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 68°F (20°C)		9°F (1°C)	
Boiling Point: 310°-395°F (154-202°C)		2.5 psia (129 mm Hg) @ 68°F (20°C)		9°F (1°C)	
Density (Spec. Gravity) at 68°F (20°C): 6.5 lbs/gal (0.78)		11.0 psia (569 mm Hg) @ 68°F (20°C)		9°F (1°C)	
Kinematic Viscosity, at 77°F (25°C): SSU 41 (5.6 cSt)		at 68°F (20°C) 0.05 psia (2.6 mm Hg)			
Specific Heat, Btu/lb. °F (cal/g °C): 0.48		Solubility in Water, %: Insoluble			
Coefficient of Thermal Expansion: per °F		Solubility of Water in Commodity, %: Insoluble			
per °C					
3. HAZARD DATA					
Flashpoint: 105-140°F (40-60°C) CC		NFPA Hazard Classification			
Flammability Limits in Air, Volume %: 0.8 - 5.0					
Autoignition Temperature: 540 °F (282 °C)					
Threshold Limit Value (TLV), ppm: 200					
Short-Term Inhalation Limits:					
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Partially filled containers may explode in fire. Extinguish fire with foam, dry chemical, or carbon dioxide. Do not expose containers with water.			
EXPOSURE	HARM		ACTION		
	INHALED	Irritation of eyes, nose, and throat if present in high concentrations; also headache and slight dizziness. Inhaled fumes will cause rapidly developing pulmonary edema.	Move to fresh air. If liquid gets into lungs, get attention immediately.		
	SWALLOWED	Irritation if swallowed. Will cause nausea, vomiting, cramps, depression of central nervous system up to coma and even death. Also possible kidney and liver damage. About one pint will cause death.	DO NOT INDUCE VOMITING. Give milk or water. Get medical attention.		
	ON SKIN	Slightly irritating on long exposure.	Remove contaminated clothing. Wipe off and wash affected areas with soap and water.		
	IN EYES	Irritation of eyes.	070	Flush with water for 15 minutes. Get medical attention.	

AL SPIRITS

TECTIVE MEASURES IN HANDLING

S-2

Adequate ventilation.

Avoid prolonged breathing of vapor.

Avoid prolonged contact with skin.

Keep containers closed and away from heat, sparks and open flame.

Wear goggles or face shield and impervious gloves.

Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.

Shut-off all lines involved in the emergency that are readily accessible.

Notify plant operations officer.

Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.

Absorb residual by Vermiculite or other solid absorber, transfer into closed containers and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible

Aluminum - compatible

Brass - compatible

Stainless Steel - compatible

Compatibility Chart No. 9

Compatible with all construction materials.

b. Preferred Materials for:

Tanks - steel

Pipes - steel

Pumps - all-iron, centrifugal or
bronz, fitted

Hoses - Polyethylene crosslinked; Viton
Buna-N

Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent mandatory on fixed roof tanks.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-7 or CP-9

Drain tank, wash with a detergent solution or steam, remove condensate and dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Mineral spirits is a mixture of paraffins and naphthenes in various proportions. Data presented are essentially for Shell mineral spirits. Those manufactured by others may have lower flashpoint and higher vapor pressures. Check with manufacturer.

071

1. COMMODITY		<h1>MOLASSES</h1>		SIGNAL WORD ATTENTION	
COMMON SYNONYMS AND TRADE NAMES Blackstrap molasses Barrel syrup Refinery molasses High-test molasses Discard molasses		DESCRIPTION Viscous, syrupy liquid Mixes with water		CHEMICAL FORMULA	
				MOLECULAR WEIGHT	
2. PHYSICAL PROPERTIES					
Freezing Point: Variable, lower than 32°F (0°C) Vapor Pressure: 1.5 psia (77.8 mm Hg) @ (°C)					
Boiling Point: Variable, approximately 215°-220°F (102°C-105°C) 2.5 psia (129 mm Hg) @ (°C)					
Density (Spec. Gravity) at 66°F (20°C): 11.7-12.0 lbs/gal (1.4-1.45) 11.0 psia (569 mm Hg) @ (°C)					
Kinematic Viscosity, at 77°F (25°C): SSU (cSt) at 66°F (20°C) psia (mm Hg)					
at 86°F (30°C): SSU 44,000-900,000 (9500-200,000 cSt)					
Specific Heat, Btu/lb. °F (cal/g °C): Solubility in Water, %: In all proportions					
Coefficient of Thermal Expansion: per °F Solubility of Water in Commodity, %: In all proportions					
per °C					
3. HAZARD DATA					
Flashpoint: None					
Flammability Limits in Air, Volume %: None					
Autoignition Temperature: None					
Threshold Limit Value (TLV), ppm: None					
Short-term Inhalation Limits:					
odor Threshold, ppm:					
<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> NFPA Hazard Classification (Estimated) </div> <div style="margin: 0 20px;"> health </div> <div style="text-align: center;"> </div> <div style="text-align: center;"> Flammability Reactivity </div> </div>					
4. HAZARD ACTION					
FIRE		Nonflammable.			
EXPOSURE	HARM		ACTION		
	INHALED	No harm in open systems. In closed systems, carbon dioxide build up may cause headache, dizziness, loss of consciousness.	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, apply artificial respiration. Get medical attention if effects noticed.		
	SWALLOWED	None			
	ON SKIN	None			
	IN EYES	May irritate eyes.	Wash eyes with water.		

5. PROTECTIVE MEASURES IN HANDLING S-1

Have adequate ventilation.
 Wear goggles or face shield.
 Air-line or self-contained respirator should be used if entry is made into an unventilated tank.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment.
 Flush residual with water.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - compatible
 Aluminum - compatible
 Brass - compatible
 Stainless Steel - compatible
 Compatibility Chart No.

b. Preferred Materials for:

Tanks - steel; internally lined steel
 Pipes - steel
 Pumps - all-iron or bronze fitted
 Hoses - Polyethylene crosslinked; Butyl;
 Natural rubber
 Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vents may be used on fixed roof tanks.
 Because of their high viscosity heat coiled tanks and heat traced pipes and pumps will be required. Both reciprocating and rotary pumps are used in service with some preheating to improve flow characteristics. However, overheating should be avoided because it will cause caramelization of sugar present in molasses. Even at normal temperatures molasses undergo slow degradation in storage accompanied by the evolution of carbon dioxide and frothing. Feed molasses have a pH range of 7.5-8.6; however, cane molasses have pH of 5.5-6.5 and may cause some corrosion. Obtain data from customer concerning viscosity, physical properties for the particular type handled.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, flush with water, air dry.

CP-4

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Molasses are very viscous masses containing 75-85% solids, are edible, and non-toxic.
 However, they decompose during storage producing carbon dioxide that may accumulate in high concentrations in closed containers and may harm persons entering unventilated tanks.

1. COMMODITY		KEROSENE		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Kerosine Fuel oil No. 1 Range oil Illuminating oil lamp oil Jet fuel: JP-1		DESCRIPTION Colorless liquid Fuel oil odor Floats on water		CHEMICAL FORMULA Mixture of hydrocarbons	
				MOLECULAR WEIGHT Mixture	
2. PHYSICAL PROPERTIES					
Freezing Point: -50°F (-46°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 115°F (46°C)			
Boiling Point: $392-617^{\circ}\text{F}$ ($200-325^{\circ}\text{C}$)		2.5 psia (129 mm Hg) @ 140°F (60°C)			
Density (Spec. Gravity) at 68°F (20°C): 6.7-7.1 lb/gal (0.8-0.85)		11.0 psia (569 mm Hg) @ $^{\circ}\text{F}$ ($^{\circ}\text{C}$)			
Kinematic Viscosity, at 77°F (25°C): SSU 30 (1.25 cSt)		at 68°F (20°C) 0.04 psia (2 mm Hg)			
at 32°F (0°C): SSU 34 (2.5 cSt)		Solubility in Water, %: Insoluble			
Specific Heat, Btu/lb. $^{\circ}\text{F}$ (cal/g $^{\circ}\text{C}$): 0.47		Solubility of Water in Commodity, %: Insoluble			
Coefficient of Thermal Expansion: per $^{\circ}\text{F}$ 0.000714 per $^{\circ}\text{C}$ 0.00128					
3. HAZARD DATA					
Flashpoint: $100-165^{\circ}\text{F}$ ($38-74^{\circ}\text{C}$)		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %: 0.7 - 6.0				Reactivity	
Autoignition Temperature: 444°F (229°C)		Health		Reactivity	
Threshold Limit Value (TLV), ppm: 200					
Short-Term Inhalation Limits: Not available					
Odor Threshold, ppm: 1					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with foam, dry chemical, or carbon dioxide. Direct water stream may be ineffective. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Irritation of nose, headache, nausea, weakness, confusion, coma. LIQUID IN LUNGS causes rapidly developing pulmonary edema.		Move to fresh air. If exposed to high concentration, attention. LIQUID IN LUNGS requires medical attention promptly.	
SWALLOWED		Harmful if swallowed. Local irritation, burning of mouth, vomiting; also as inhaled. 1/2 pint may cause death.		DO NOT INDUCE VOMITING. Give milk/or water. Get medical attention.	
ON SKIN		Irritating to skin. May be absorbed through skin.		Wipe off and wash affected areas with soap and water. Remove contaminated clothing and wash before reuse.	
IN EYES		Irritating to eyes. Can cause corneal burns.		Wash with water for 15 minutes. Get medical attention.	

KEROSENE

5. PROTECTIVE MEASURES IN HANDLING

- Have adequate ventilation.
- Avoid prolonged breathing of vapor.
- Avoid prolonged contact with skin.
- Keep containers closed and away from heat, sparks and open flame.
- Wear goggles or face shield and impervious gloves.
- Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

- Shut-off all lines involved in the emergency that are readily accessible.
- Notify plant operations officer.
- Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

- Pump off spilled material to confinement at separator.
- Absorb residual by Vermiculite or other solid absorber, load into closed containers and transport for final disposal.

B. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel	-	Compatible
Aluminum	-	Compatible
Brass	-	Compatible
Stainless Steel	-	Compatible

Compatibility Chart No. 9

Compatible with the usual construction materials.

b. Preferred Materials for:

Tanks	-	steel
Pipes	-	steel
Pumps	-	all-iron, centrifugal or bronze fitted
Hoses	-	Polyethylene crosslinked; Buna-N
Gaskets	-	JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks. Return bends normally acceptable. State of New Jersey Chapt. 18 establishes choice of return bend or P-V vent based on tank size for vapor pressure materials over 102 psia @ 70°F.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air-dry.

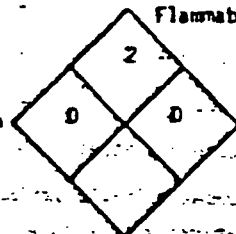
CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Kerosene is a static generator. It is sensitive to contamination with higher boiling components which change its critical burning characteristics (absence of smoke) in pot or wick type burners. Aromatic content is particularly important, and the aniline point establishes a measure of this characteristic.

075

1. COMMODITY		JP-4		SIGNAL WORD CAUTION																
COMMON SYNONYMS AND TRADE NAMES Jet Fuel, Grade JP-4		DESCRIPTION Colorless liquid. Floats on water. Fuel oil odor.		CHEMICAL FORMULA Mixture of hydrocarbons																
				MOLECULAR WEIGHT Mixture of hydrocarbons																
2. PHYSICAL PROPERTIES																				
Freezing Point: below -76°F (-60°C) Boiling Point: $349-549^{\circ}\text{F}$ ($176-287^{\circ}\text{C}$) Density (Spec. Gravity) at 68°F (20°C): 6.2-6.9 lbs/gal (0.746-0.825) Kinematic Viscosity, at 77°F (25°C): SSU 90 (1.0 \pm 5t) at $^{\circ}\text{F}$ ($^{\circ}\text{C}$): SSU (1 \pm 5t) Specific Heat, Btu/lb. $^{\circ}\text{F}$ (cal/g $^{\circ}\text{C}$): 0.48 Coefficient of Thermal Expansion: per $^{\circ}\text{F}$ 0.000734 per $^{\circ}\text{C}$ 0.0013																				
Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 68°F (20°C) 2.5 psia (129 mm Hg) @ 95°F (35°C) 11.0 psia (569 mm Hg) @ 140°F (60°C) at 68°F (20°C): 1.5 psia (77.8 mm Hg)																				
Solubility in Water, %: Insoluble																				
Solubility of Water in Commodity, %: Insoluble																				
3. HAZARD DATA																				
Flashpoint: -14°F to 30°F (-26°C to 3°C) EC																				
Flammability Limits in Air, Volume %: 1.3 - 8.0																				
Autoignition Temperature: 464°F (240°C)																				
Threshold Limit Value (TLV), ppm: 200																				
Short-Term Inhalation Limits:																				
Door Threshold, ppm:																				
NFPA Hazard Classification 																				
4. HAZARD ACTION																				
FIRE		Extremely flammable. May be ignited by heat, sparks, or open flame. May explode if ignited in an enclosed area. Vapor is heavier than air and flashback along vapor trail may occur. Partially filled containers may explode in fire. Extinguish with foam, dry chemicals, or carbon dioxide. Cool exposed containers with water.																		
EXPOSURE		<table border="1"> <thead> <tr> <th></th> <th>HARM</th> <th>ACTION</th> </tr> </thead> <tbody> <tr> <td>INHALED</td> <td>Irritating to eyes, nose and throat. Exposures to low concentrations or for short time has little effect. High concentrations will cause dizziness, headache, anesthesia, coma, and respiratory arrest. Liquid in lungs will cause pulmonary edema.</td> <td>Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, administer artificial respiration. If liquid in lungs, get medical attention immediately.</td> </tr> <tr> <td>SWALLOWED</td> <td>Harmful if swallowed. Irritation of mouth, esophagus and stomach; vomiting, diarrhea; symptoms as inhaled. Between one ounce and a pint may cause death.</td> <td>DO NOT INDUCE VOMITING. Have victim drink milk or water. If appreciable quantity swallowed, get medical attention and stomach lavage.</td> </tr> <tr> <td>ON SKIN</td> <td>Irritating to skin on long exposure.</td> <td>Remove contaminated clothing. Wash affected areas with soap and water.</td> </tr> <tr> <td>IN EYES</td> <td>Irritating to eyes.</td> <td>Flush eyes with water for 15 minutes. Get medical attention.</td> </tr> </tbody> </table>					HARM	ACTION	INHALED	Irritating to eyes, nose and throat. Exposures to low concentrations or for short time has little effect. High concentrations will cause dizziness, headache, anesthesia, coma, and respiratory arrest. Liquid in lungs will cause pulmonary edema.	Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, administer artificial respiration. If liquid in lungs, get medical attention immediately.	SWALLOWED	Harmful if swallowed. Irritation of mouth, esophagus and stomach; vomiting, diarrhea; symptoms as inhaled. Between one ounce and a pint may cause death.	DO NOT INDUCE VOMITING. Have victim drink milk or water. If appreciable quantity swallowed, get medical attention and stomach lavage.	ON SKIN	Irritating to skin on long exposure.	Remove contaminated clothing. Wash affected areas with soap and water.	IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.
	HARM	ACTION																		
INHALED	Irritating to eyes, nose and throat. Exposures to low concentrations or for short time has little effect. High concentrations will cause dizziness, headache, anesthesia, coma, and respiratory arrest. Liquid in lungs will cause pulmonary edema.	Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, administer artificial respiration. If liquid in lungs, get medical attention immediately.																		
SWALLOWED	Harmful if swallowed. Irritation of mouth, esophagus and stomach; vomiting, diarrhea; symptoms as inhaled. Between one ounce and a pint may cause death.	DO NOT INDUCE VOMITING. Have victim drink milk or water. If appreciable quantity swallowed, get medical attention and stomach lavage.																		
ON SKIN	Irritating to skin on long exposure.	Remove contaminated clothing. Wash affected areas with soap and water.																		
IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.																		

5. PROTECTIVE MEASURES IN HANDLING

Have adequate ventilation.
 Avoid prolonged breathing of vapor.
 Avoid prolonged contact with skin.
 Keep containers closed and away from heat, sparks and open flame.
 Wear goggles or face shield and impervious gloves.
 Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.
 Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Use water fog nozzles to hold down vapor.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Apply foam or fine water spray to minimize vapor formation.
 Pump away spilled material to confinement at separator.
 Residual will evaporate in a few hours; however, adequate precautions should be taken to prevent possible ignition of the vapor.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - Compatible
 Aluminum - Compatible
 Brass -
 Stainless Steel - Compatible

Compatibility Chart No. 9

Natural rubber hoses are attacked and unsuitable.

b. Preferred Materials for:

Tanks - steel
 Pipes - steel
 Pumps - all-iron or bronze fitted
 Hoses - Polyethylene crosslinked, Viton
 Buna-N
 JM-60
 Baskets -

9. STORAGE CONSIDERATIONS

Venting:
 Because of high vapor pressure considerations, internal floating roof or open top tanks will be required in most states.

10. LABELING REQUIREMENTS

Flammable liquid.

11. CLEANING PROCEDURES

Drain tank, gas dry mechanically then wash with a detergent solution and air dry.

CP-2 followed by CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

JP-4 is static generator; therefore, spark-proof and static-proof equipment should be employed.

NO. F-6

1. COMMODITY		FUEL OIL NO.6		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Bunker C oil Residual fuel oil No. 6		DESCRIPTION Thick, black liquid Tar odor Usually floats on water.		CHEMICAL FORMULA Mixture of Hydrocarbons	
				MOLECULAR WEIGHT	
2. PHYSICAL PROPERTIES					
Freezing Point: 25-55°F (-4-13°C)		Vapor Pressure: 1.5 psia (77.2 mm Hg) @ 68°F (20°C)		2.5 psia (129 mm Hg) @ 77°F (25°C)	
Boiling Point: 415-510°F (212-593°C)		Density (Spec. Gravity) at 68°F (20°C): 7.5 - 8.5 lbs/gal (0.9 - 0.97)		11.0 psia (569 mm Hg) @ 68°F (20°C)	
Kinematic Viscosity, at 77°F (25°C): SSU ~3011 (~650 cSt)		Solubility in Water, %: Insoluble		Solubility of Water in Commodity, %: Insoluble	
at 175°F (80°C): SSU 155 (33 cSt)					
Specific Heat, Btu/lb. °F (cal/g °C): 0.47					
Coefficient of Thermal Expansion: per °F					
per °C					
3. HAZARD DATA					
Flashpoint: 150°F (>66°C) CC: 30°F (160°C) DC		NFPA Hazard Classification			
Flammability Limits in Air, Volume %: 1 - 5					
Autoignition Temperature: 765 °F (-070°C)					
Threshold Limit Value (TLV), ppm:					
Short-Term Inhalation Limits:					
Door Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with dry chemical, foam, or carbon dioxide.			
EXPOSURE		HARM		ACTION	
INHALED		Vapor pressure too low, even when heated, to cause significant harm.		None.	
SWALLOWED		Harmful if swallowed. Causes gastrointestinal irritation. About one pint may cause death.		Do NOT induce vomiting. Have victim drink milk or water.	
ON SKIN		Slightly irritating on long exposure.		Remove contaminated clothing. Wipe off and wash affected areas with soap and water.	
IN EYES		Irritation to eyes.		Flush eyes with water for 15 minutes. Get medical attention.	
		078			

FUEL OIL NO. 6

5. PROTECTIVE MEASURES IN HANDLING

Avoid prolonged contact with skin.
Wear goggles or face shield and impervious gloves.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

If possible, pump off to containment at separator.
If spill becomes too viscous for pumping on cooling, remove mechanically.
Spread Vermiculite, sand or dirt to absorb residual and transport for final disposition.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible

Compatibility Chart to 9

Compatible with the usual construction materials.

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - P.D. all-iron or bronze fitted,
centrifugals >1000 gpm
Hoses - neoprene, wire reinforced
Gaskets - asbestos

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks. Return bends normal.
Because of its high solidification point and high viscosity, fuel oil No. 6 is usually stored and pumped at temperatures above 115°F.
heating coils and insulation on tanks and heat tracing of pipes and pumps will be required.
Tank trucks may require higher load-in temperatures to insure flow at destination. External heat exchangers detailed to provide load-out heating for tank truck filling.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-9

Drain tank, steam, remove condensate and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Since fuel oil No. 6 is stored and transported at temperatures above 130°F, exposure to hot vapors and hot liquid may cause serious heat burns and blisters. Since minimum specifications call for flash point of 150°F explosive vapors will exist generally at 150°F, or over in the vapor space.

079

1. COMMODITY		FUEL OIL NO. 5		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Residual fuel oil No. 5		DESCRIPTION Oily, dark liquid Strong oil odor Usually floats on water		CHEMICAL FORMULA Mixture	
				MOLECULAR WEIGHT Mixture	
2. PHYSICAL PROPERTIES					
Freezing Point: 0 °F (-18 °C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 68 °F (20 °C)		2.5 psia (129 mm Hg) @ 68 °F (20 °C)	
Boiling Point: 426-1062 °F (218-570 °C)		Density (Spec. Gravity) at 68 °F (20 °C): 7.5 lbs/gal (0.90)		11.0 psia (569 mm Hg) @ 68 °F (20 °C)	
Kinematic Viscosity, at 77 °F (25 °C): 550 (cSt)		at 100 °F (38 °C): 550-137-269 (29-58 cSt)		Solubility in Water, %: Insoluble	
Specific Heat, Btu/lb. °F (cal/g °C): 0.47		Coefficient of Thermal Expansion: per °F		Solubility of Water in Commodity, %: Insoluble	
per °C					
3. HAZARD DATA					
Flashpoint: >130 °F (>54 °C) CC		NFPA Hazard Classification		Flammability: 2	
Flammability Limits in Air, Volume %: 1-5		Autoignition Temperature: °F (°C)		Health: 1	
Threshold Limit Value (TLV), ppm:		Short-Term Inhalation Limits:		Reactivity: 1	
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with dry chemical, foam, or carbon dioxide.			
EXPOSURE		HARM		ACTION	
INHALED		Vapor pressure too low, even when inhaled, to cause significant harm.		Move to fresh air.	
SWALLOWED		Harmful if swallowed. Causes gastrointestinal irritation. About one pint may cause death.		Do NOT induce vomiting. Have victim drink milk or water.	
ON SKIN		Slightly irritating on long exposure.		Remove contaminated clothing. Wipe off and wash affected areas with soap and water.	
IN EYES		Irritating to eyes.		Flush eyes with water for 15 minutes. Get medical attention.	

FUEL OIL NO. 5

5. PROTECTIVE MEASURES IN HANDLING S-2

Avoid prolonged contact with skin.
Wear goggles or face shield and impervious gloves.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

If possible, pump off to containment at separator.
If spill becomes too viscous for pumping on cooling, remove mechanically.
Spread Vermiculite, sand or dirt to absorb residual and transport for final disposition.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel	-	compatible
Aluminum	-	compatible
Brass	-	compatible
Stainless Steel	-	compatible

Compatibility Chart No. 9

Compatible with the usual construction materials.

b. Preferred Materials for:

Tanks	-	steel
Pipes	-	steel
Pumps	-	all-iron or bronze fitted
Hoses	-	Buna-N; Viton, wire reinforced
Gaskets	-	JN-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks. Return bends normally acceptable.
Because of its high solidification point and high viscosity, fuel oil No. 5 is usually stored and pumped at temperatures above 80°F.
Heating coils and insulation on tanks and heat tracing of pipes and pumps may be required.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Since fuel oil No. 5 may be stored and transported at temperatures above 80°F, exposure to hot vapors and hot liquid can cause heat burns and blisters.

081

1. COMMODITY		FUEL OIL NO. 4		SIGNAL WORD CAUTION	
COMMON SYNONYMS AND TRADE NAMES Residual fuel oil No. 4		DESCRIPTION Oily, dark liquid Characteristic fuel oil odor Floats on water		CHEMICAL FORMULA Mixture	
				MOLECULAR WEIGHT Mixture	
2. PHYSICAL PROPERTIES					
Freezing Point: -20 to 15°F (-29 to -9°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 70°F (21°C)			
Boiling Point: 214-1090°F (101-588°C)		2.5 psia (129 mm Hg) @ 70°F (21°C)			
Density (Spec. Gravity) at 60°F (20°C): 7.5 lbs/gal (0.90)		11.0 psia (569 mm Hg) @ 70°F (21°C)			
Kinematic Viscosity, at 77°F (25°C): SSU (cSt)		at 60°F (20°C) 0.04 psia (2 mm Hg)			
at 100°F (38°C): SSU 70-94 (13-19 cSt)		Solubility in Water, %: Insoluble			
Specific Heat, Btu/lb. °F (cal/g °C):		Solubility of Water in Commodity, %: Insoluble			
Coefficient of Thermal Expansion: per °F per °C					
3. HAZARD DATA					
Flashpoint: >130 °F (>54 °C) CC		NFPA Hazard Classification			
Flammability Limits in Air, Volume %: 1-5					
Autoignition Temperature: 505 °F (263 °C)					
Threshold Limit Value (TLV), ppm:					
Short-Term Inhalation Limits:					
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with dry chemical, foam, or carbon dioxide.			
EXPOSURE		HARM		ACTION	
		INHALED	Vapor pressure too low, even when heated, to cause significant harm.	Move to fresh air.	
		SWALLOWED	Harmful if swallowed. Causes gastrointestinal irritation. About one pint may cause death.	Do NOT induce vomiting. Have victim drink milk or water.	
		ON SKIN	Slightly irritating on long exposure.	Remove contaminated clothing. Wash off and wash affected areas with soap and water.	
		IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.	

5. PROTECTIVE MEASURES IN HANDLING S-2

Avoid prolonged contact with skin.
Wear goggles or face shield and impervious gloves.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

If possible, pump off to containment at separator.
If spill becomes too viscous for pumping on cooling, remove mechanically.
Spread Vermiculite, sand or dirt to absorb residual and transport for final disposition.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - compatible

Aluminum - compatible

Brass - compatible

Stainless Steel - compatible

Compatibility Chart No. 9

Compatible with the usual construction materials.

b. Preferred Materials for:

Tanks - steel

Pipes - steel

Pumps - all-iron or bronze fitted

Hoses - Buna-N; Viton; wire reinforced

Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks. Return vents normally acceptable.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

When hot material is pumped, exposure to hot vapors and hot liquid may cause heat burns and blisters.

1. COMMODITY <div style="text-align: center; font-size: 1.5em; font-weight: bold;">FUEL OIL NO.2</div>		SIGNAL WORD <div style="text-align: center; font-weight: bold;">CAUTION</div>																	
COMMON SYNONYMS AND TRADE NAMES Home heating oil Domestic heating oil		DESCRIPTION Oily, yellow-brown liquid. Characteristic fuel oil odor. Floats on water.																	
		CHEMICAL FORMULA Mixture of hydrocarbons																	
		MOLECULAR WEIGHT																	
2. PHYSICAL PROPERTIES <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Freezing Point: -20 °F (-29 °C)</td> <td style="width: 50%;">Vapor Pressure: 1.5 psia (77.6 mm Hg) @ °F (°C)</td> </tr> <tr> <td>Boiling Point: 540-640°F (282-338°C)</td> <td>2.5 psia (129 mm Hg) @ °F (°C)</td> </tr> <tr> <td>Density (Spec. Gravity) at 68°F (20°C): 7.3-7.5 lbs/gal (0.87-0.90)</td> <td>11.0 psia (569 mm Hg) @ °F (°C)</td> </tr> <tr> <td>Kinematic Viscosity, at 77°F (25°C): SSU 33 (2 cSt)</td> <td>at 68°F (20°C): 0.14 psia (2 mm Hg)</td> </tr> <tr> <td>at 68°F (20°C): SSU 46 (6 cSt)</td> <td></td> </tr> <tr> <td>Specific Heat, Btu/lb. °F (cal/g °C): 0.47</td> <td>Solubility in Water, 1: Insoluble</td> </tr> <tr> <td>Coefficient of Thermal Expansion: per °F</td> <td>Solubility of Water in Commodity, 1: Insoluble</td> </tr> <tr> <td>per °C</td> <td></td> </tr> </table>				Freezing Point: -20 °F (-29 °C)	Vapor Pressure: 1.5 psia (77.6 mm Hg) @ °F (°C)	Boiling Point: 540-640°F (282-338°C)	2.5 psia (129 mm Hg) @ °F (°C)	Density (Spec. Gravity) at 68°F (20°C): 7.3-7.5 lbs/gal (0.87-0.90)	11.0 psia (569 mm Hg) @ °F (°C)	Kinematic Viscosity, at 77°F (25°C): SSU 33 (2 cSt)	at 68°F (20°C): 0.14 psia (2 mm Hg)	at 68°F (20°C): SSU 46 (6 cSt)		Specific Heat, Btu/lb. °F (cal/g °C): 0.47	Solubility in Water, 1: Insoluble	Coefficient of Thermal Expansion: per °F	Solubility of Water in Commodity, 1: Insoluble	per °C	
Freezing Point: -20 °F (-29 °C)	Vapor Pressure: 1.5 psia (77.6 mm Hg) @ °F (°C)																		
Boiling Point: 540-640°F (282-338°C)	2.5 psia (129 mm Hg) @ °F (°C)																		
Density (Spec. Gravity) at 68°F (20°C): 7.3-7.5 lbs/gal (0.87-0.90)	11.0 psia (569 mm Hg) @ °F (°C)																		
Kinematic Viscosity, at 77°F (25°C): SSU 33 (2 cSt)	at 68°F (20°C): 0.14 psia (2 mm Hg)																		
at 68°F (20°C): SSU 46 (6 cSt)																			
Specific Heat, Btu/lb. °F (cal/g °C): 0.47	Solubility in Water, 1: Insoluble																		
Coefficient of Thermal Expansion: per °F	Solubility of Water in Commodity, 1: Insoluble																		
per °C																			
3. HAZARD DATA Flashpoint: 136 °F (58 °C) CC Flammability Limits in Air, Volume %: 0.6 - 6.5 Autoignition Temperature: 494 °F (256 °C) Threshold Limit Value (TLV), ppm: Short-Term Inhalation Limits: Odor Threshold, ppm:																			
		NFPA Hazard Classification	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Health Flammability Reactivity </div>																
4. HAZARD ACTION																			
FIRE	Combustible. Partially filled containers may explode in fire. Extinguish fire with dry chemical, foam or carbon dioxide. Cool exposed containers with water.																		
EXPOSURE	<div style="display: flex; justify-content: space-around;"> HARM ACTION </div>																		
	INHALED	Vapor slightly irritating to nose, throat and eyes. Will cause headache and giddiness. Liquid in lungs will cause rapidly developing pulmonary edema.	Move to fresh air. If breathing is difficult. If liquid aspirated into lungs, call attention immediately.																
	SWALLOWED	Harmful if swallowed. Causes nausea, vomiting, cramps, depression of central nervous system, to coma and death. Possible delayed kidney and liver damage. About one pint will cause death.	DO NOT INDUCE VOMITING. Have victim drink water or milk. If appreciable quantity swallowed, call attention and stomach lavage.																
	ON SKIN	Slightly irritating on prolonged contact.	Remove contaminated clothing. Remove by wiping and wash affected area with soap and water.																
	IN EYES	Irritating to eyes.	Flush with water for 15 minutes.																

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.
 Avoid prolonged breathing of vapor.
 Avoid prolonged contact with skin.
 Keep containers closed and away from heat, sparks and open flame.
 Wear goggles or face shield and impervious gloves.
 Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
 Notify plant operations officer.
 Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
 Absorb residual by Vermiculite or other solid absorber and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - compatible
 Aluminum - compatible
 Brass - compatible
 Stainless Steel - compatible

Compatibility Chart No. 9

Compatible with the usual construction materials.

b. Preferred Materials for:

Tanks - steel
 Pipes - steel
 Pumps - all-iron or bronze fitted
 Hoses - Polyethylene crosslinked;
 Buna-N; Viton
 Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vents may be used on fixed roof tanks; however standard return bends acceptable.
 State of New Jersey Chapt. 16 establishes choice of return bend or P-V vent based on tank size for vapor pressure materials over .02 psia @ 70°F.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

085

1. COMMODITY		ETHYLENE GLYCOL		SIGNAL WORD ATTENTION	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION		CHEMICAL FORMULA	
1,2 Ethanediol Glycol Alcohol Ethylene Alcohol Glycol Monoethylene Glycol		Colorless, syrupy liquid Hygroscopic Sinks and mixes with water Combustible Odorless, sweetish taste		<chem>CH2OH CH2OH</chem>	
				MOLECULAR WEIGHT	
				62.1	
2. PHYSICAL PROPERTIES					
Freezing Point: 10°F (-12°C)		Vapor Pressure: 1.5 psia (77.1 mm Hg) @ 147°F (64°C)			
Boiling Point: 387°F (197°C)		2.5 psia (129 mm Hg) @ 147°F (64°C)			
Density (Spec. Gravity) at 68°F (20°C): 9.3 lbs/gal (1.12)		11.0 psia (569 mm Hg) @ 147°F (64°C)			
Kinematic Viscosity, at 77°F (25°C): SSU 77 (15cSt)		at 68°F (20°C) Neg. visia (.05 mm Hg)			
at 20°F (-5°C): SSU 460 (-100cSt)		Solubility in Water, %: soluble in all proportions			
Specific Heat: 0.57 Btu/lb°F (0.57 cal/g. °C)		Solubility of Water in Commodity, %: soluble in all proportions			
Coefficient of Thermal Expansion: 0.000360 per °F					
0.000648 per °C					
3. HAZARD DATA					
Flashpoint: 240°F (116°C), CC		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %: 3.2 - UEL not avail.				Health	
Autoignition Temperature: 775°F (413°C)				Reactivity	
Threshold Limit Value (TLV): ppm - 100					
Short-Term Inhalation Limits: not pertinent					
Odor Threshold, ppm: unavailable					
4. HAZARD ACTION					
FIRE		Combustible Extinguish with dry chemical, alcohol foam, carbon dioxide, or water fog. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Under normal conditions vapor pressure too low to cause harm. When heated, may produce high vapor concentrations causing giddiness, dizziness, drowsiness.		Remove to fresh air. Give oxygen if necessary. If sleepiness or coma present, get medical attention.	
SWALLOWED		Harmful if swallowed. Transient exhalation, weakness, nausea, vomiting, abdominal cramps, possible kidney damage. 4, oz. taken internally may cause death.		Give an emetic such as mustard or salt water (1 tsp. per glass) and get medical attention.	
ON SKIN		Minor skin irritation.		Wash affected areas with soap and water.	
IN EYES		Irritates the eyes.		Flush freely with water for about 15 minutes.	

5. PROTECTIVE MEASURES IN HANDLING S-1

Avoid prolonged contact with skin.
Wear goggles or face shield.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to confinement.
Flush residual with water. Dilute with water before discharge.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - Compatible

Aluminum - Compatible

Brass - Compatible

Stainless Steel - Compatible

Compatibility Chart No. 8

Most materials of construction suitable.

b. Preferred Materials for:

Tanks - steel

Pipes - steel

Pumps - all-iron or cross fitted centrifugal

Hoses - Buna-N; Butyl; Polyethylene crosslinked

Gaskets - JM-60

9. STORAGE CONSIDERATIONS

No special handling problems. Steel steam coils for blending tanks are satisfactory. Centrifugal pumps preferred but may have some flow problems below 20°F (-5°C).
Venting: Std. pressure-vacuum on fixed roof tanks.

10. LABELING REQUIREMENTS

No hazard label required.

11. CLEANING PROCEDURES

Drain tank, wash with water and air dry.

CP-4

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Mixing with other materials to make antifreeze can be effectively done with eductor and high head centrifugal pump.

Product Background

CELANESE
CHEMICAL
COMPANY, INC.

CELANESE CHEMICAL COMPANY, INC. 1250 WEST MOCKINGBIRD LANE DALLAS, TX 75247 PHONE: 214-689-4000

ETHYLENE GLYCOL

DESCRIPTION

Ethylene glycol is a clear, colorless syrup-like liquid with little odor. It will dissolve in water. Ethylene glycol does not readily react with other materials or itself.

EFFECTS ON PEOPLE

Contact with the liquid will cause skin irritation and should be avoided since ethylene glycol can be absorbed through the skin in toxic quantities. Ingestion of the liquid will cause serious injury or death. Exposure to the vapor or mist generated by heated ethylene glycol will irritate the eyes and can also lead to the absorption of toxic quantities.

USES

Ethylene glycol is used in de-icing fluids and anti-freeze. It is also used as a raw material in the production of polyester resins, plasticizers, adhesives, and lacquers.

CAS No. 107-21-1
Rev. 0, 2/80

088

TO THE BEST OF OUR KNOWLEDGE, THE INFORMATION CONTAINED HEREIN IS ACCURATE. HOWEVER, NEITHER CELANESE CORPORATION NOR ANY OF ITS AFFILIATES ASSUMES ANY LIABILITY WHATSOEVER FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED HEREIN. FINAL DETERMINATION OF SUITABILITY OF ANY MATERIAL AND WHETHER THERE IS ANY INFRINGEMENT OF PATENTS IS THE SOLE RESPONSIBILITY OF THE USER.

ALL CHEMICALS MAY PRESENT UNKNOWN HEALTH HAZARDS AND SHOULD BE USED WITH CAUTION. ALTHOUGH CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, WE CANNOT GUARANTEE THAT THESE ARE THE ONLY HAZARDS WHICH EXIST. USERS OF ANY CHEMICAL SHOULD SATISFY THEMSELVES BY INDEPENDENT INVESTIGATION OF CURRENT SCIENTIFIC AND MEDICAL KNOWLEDGE THAT THE MATERIAL CAN BE USED SAFELY.

1. COMMODITY <div style="text-align: center; font-size: 1.5em; font-weight: bold; margin-top: 10px;">DIESEL FUEL</div>		SIGNAL WORD <div style="text-align: center; font-weight: bold; margin-top: 10px;">CAUTION</div>																
COMMON SYNONYMS AND TRADE NAMES Diesel oil (light or medium) Fuel oil No. 1-D Fuel oil No. 2-D	DESCRIPTION Oily, yellow brown liquid Characteristic fuel-oil odor. Floats on water.	CHEMICAL FORMULA Mixture of Hydrocarbons MOLECULAR WEIGHT																
2. PHYSICAL PROPERTIES <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Freezing Point: -30 to 0°F (-34 to -18°C)</td> <td style="width: 50%;">Vapor Pressure: 1.5 psia (77.8 mm. Hg) @ 4°F (4°C)</td> </tr> <tr> <td>Boiling Point: 360 to 640°F (182 to 338°C)</td> <td>2.5 psia (129 mm. Hg) @ 4°F (4°C)</td> </tr> <tr> <td>Density (Spec. Gravity) at 68°F (20°C): 6.6 lbs/gal (0.8 - 0.9)</td> <td>11.0 psia (569 mm Hg) @ 4°F (4°C)</td> </tr> <tr> <td>Kinematic Viscosity, at 77°F (25°C): SSU 30-33 (1.1 - 2.1 cSt)</td> <td>at 68°F (20°C) 0.04 psia (2 mm Hg)</td> </tr> <tr> <td>at 0°F (-18°C): SSU 39 (4 cSt)</td> <td>Solubility in Water, 1: Insoluble</td> </tr> <tr> <td>Specific Heat, Btu/lb. °F (cal/g °C): 0.47</td> <td>Solubility of Water in Commodity, 2: Insoluble</td> </tr> <tr> <td>Coefficient of Thermal Expansion: per °F 0.00065</td> <td></td> </tr> <tr> <td>per °C 0.00117</td> <td></td> </tr> </table>			Freezing Point: -30 to 0°F (-34 to -18°C)	Vapor Pressure: 1.5 psia (77.8 mm. Hg) @ 4°F (4°C)	Boiling Point: 360 to 640°F (182 to 338°C)	2.5 psia (129 mm. Hg) @ 4°F (4°C)	Density (Spec. Gravity) at 68°F (20°C): 6.6 lbs/gal (0.8 - 0.9)	11.0 psia (569 mm Hg) @ 4°F (4°C)	Kinematic Viscosity, at 77°F (25°C): SSU 30-33 (1.1 - 2.1 cSt)	at 68°F (20°C) 0.04 psia (2 mm Hg)	at 0°F (-18°C): SSU 39 (4 cSt)	Solubility in Water, 1: Insoluble	Specific Heat, Btu/lb. °F (cal/g °C): 0.47	Solubility of Water in Commodity, 2: Insoluble	Coefficient of Thermal Expansion: per °F 0.00065		per °C 0.00117	
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Coefficient of Thermal Expansion: per °F 0.00065																		
per °C 0.00117																		
3. HAZARD DATA Flashpoint: 100 - 125°F (36 - 51°C) CC Flammability Limits in Air, Volume %: 1.3 - 6 Autoignition Temperature: 350 - 625°F (177 - 329°C) Threshold Limit Value (TLV), ppm: Short-Term Inhalation Limits: Door Threshold, ppm:																		
NFPA Hazard Classification		<div style="display: flex; justify-content: space-between; font-size: 0.8em; margin-top: 5px;"> Flammability Health Reactivity </div>																
4. HAZARD ACTION																		
FIRE	Combustible. Partially filled containers may explode in fire. Extinguish fire with foam, dry chemical, or carbon dioxide. Cool exposed containers with water.																	
EXPOSURE	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 30%;">HARM</th> <th style="width: 55%;">ACTION</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; font-weight: bold;">INHALED</td> <td>Irritation of eyes, nose, and throat if present in high concentrations; also headache and slight giddiness. Liquid in lungs will cause rapidly developing edema.</td> <td>Move to fresh air. If liquid gets into lungs, get medical attention immediately.</td> </tr> <tr> <td style="text-align: center; font-weight: bold;">SWALLOWED</td> <td>Harmful if swallowed. Will cause nausea, vomiting, cramps, depression of central nervous system up to coma and even death; also possible kidney and liver damage. About one pint will cause death.</td> <td>DO NOT INDUCE VOMITING. Give milk or water. Get medical attention.</td> </tr> <tr> <td style="text-align: center; font-weight: bold;">ON SKIN</td> <td>Slightly irritating on long exposure.</td> <td>Remove contaminated clothing. Wipe off and wash affected areas with soap and water.</td> </tr> <tr> <td style="text-align: center; font-weight: bold;">IN EYES</td> <td>Irritation of eyes.</td> <td>Flush with water for 15 minutes.</td> </tr> </tbody> </table>		HARM	ACTION	INHALED	Irritation of eyes, nose, and throat if present in high concentrations; also headache and slight giddiness. Liquid in lungs will cause rapidly developing edema.	Move to fresh air. If liquid gets into lungs, get medical attention immediately.	SWALLOWED	Harmful if swallowed. Will cause nausea, vomiting, cramps, depression of central nervous system up to coma and even death; also possible kidney and liver damage. About one pint will cause death.	DO NOT INDUCE VOMITING. Give milk or water. Get medical attention.	ON SKIN	Slightly irritating on long exposure.	Remove contaminated clothing. Wipe off and wash affected areas with soap and water.	IN EYES	Irritation of eyes.	Flush with water for 15 minutes.	089	
	HARM	ACTION																
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ON SKIN	Slightly irritating on long exposure.	Remove contaminated clothing. Wipe off and wash affected areas with soap and water.																
IN EYES	Irritation of eyes.	Flush with water for 15 minutes.																

5. PROTECTIVE MEASURES IN HANDLING S-2

Have adequate ventilation.

Avoid prolonged breathing of vapor.

Avoid prolonged contact with skin.

Keep containers closed and away from heat, sparks and open flame.

Wear goggles or face shield and impervious gloves.

Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.

Notify plant operations officer.

Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.

Absorb residual by Vermiculite or other solid absorber and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS**A. Compatibility with:**

Steel - compatible

Aluminum - compatible

Brass - compatible

Stainless Steel - compatible

Compatibility Chart No. 9

Compatible with the usual construction materials.

B. Preferred Materials for:

Tanks - steel

Pipes - steel

Pumps - all-iron or bronze fitted

Hoses - Polyethylene crosslinked;
Buna-N; Viton

Gaskets - 3M-50

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vents may be used on fixed roof tanks; however standard return bends are acceptable. State of New Jersey Chapt. 16 establishes choice of return bend or p-v vent based on tank size for materials with vapor pressures over .02 psia at 70°F.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-7

Drain tank, steam, then flush with a detergent solution, and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

090

1. COMMODITY		CORN OIL		SIGNAL WORD ATTENTION	
COMMON SYNONYMS AND TRADE NAMES Nasola oil Maize oil		DESCRIPTION Pale yellow, oily liquid Faint, characteristic odor Floats on water		CHEMICAL FORMULA Mixture	
				MOLECULAR WEIGHT Mixture	
2. PHYSICAL PROPERTIES					
Freezing Point: 14 °F (-10°C)		Vapor Pressure: 1.5 psia (77.6 mm Hg) @ 68°F (20°C)			
Boiling Point: °F (°C)		2.5 psia (129 mm Hg) @ 68°F (20°C)			
Density (Spec. Gravity) at 68°F (20°C): 7.7 lbs/gal (0.92)		11.0 psia (569 mm Hg) @ 68°F (20°C)			
Kinematic Viscosity, at 77°F (25°C): SSU 4600 (1000 cSt) (estimated)		approx at 68°F (20°C) 0.03 psia (1.5 mm Hg)			
at °F (°C): SSU (cSt)		Solubility in Water, %: Insoluble			
Specific Heat, Btu/lb. °F (cal/g °C): 0.35		Solubility of Water in Commodity, %: Insoluble			
Coefficient of Thermal Expansion: per °F per °C					
3. HAZARD DATA					
Flashpoint: 490 °F (254°C) CC		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %:				Reactivity	
Autoignition Temperature: 740 °F (393°C)		Health		D	
Threshold Limit Value (TLV), ppm:				D	
Short-Term Inhalation Limits:					
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Because of low vapor pressure, no harm at normal temperatures.			
SWALLOWED		None; edible.			
ON SKIN		Cold, none. Heated product may cause heat burns and blisters.			
IN EYES		May irritate eyes.		Flush with water for 15 minutes.	

5. PROTECTIVE MEASURES IN HANDLING

Have adequate ventilation.
Keep containers closed and away from heat.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
Absorb residual by Vermiculite or other solid absorbent and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS**a. Compatibility with:**

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible

Compatibility Chart No. 13

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - Polyethylene crosslinked; E ty
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.
Heating required to make the product flow readily; thus heat coiled and/or insulated tanks and heat-traced piping and pumps may be required.
Avoid overheating since product is somewhat heat sensitive.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

Drain tank, wash with detergent and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		COTTONSEED OIL		SIGNAL WORD ATTENTION	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION Oily, pale yellow, viscous liquid Floats on water.		CHEMICAL FORMULA	
				MOLECULAR WEIGHT	
2. PHYSICAL PROPERTIES					
Freezing Point: 32 °F (0 °C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 70 °F (21 °C)			
Boiling Point: 450 °F (232 °C)		2.5 psia (129 mm Hg) @ 100 °F (38 °C)			
Density (Spec. Gravity) at 68°F (20°C): 7.7 lbs/gal (0.92)		11.0 psia (569 mm Hg) @ 140 °F (60 °C)			
Kinematic Viscosity, at 77°F (25°C): SSU 5035 (1087 cSt)		at 68°F (20°C) 0.04 psia (2 mm Hg)			
at 100°F (38 °C): SSU 2015 (435 cSt)		Solubility in Water, %: Insoluble			
Specific Heat, Btu/lb. °F (cal/g °C): 0.48		Solubility of Water in Commodity, %: Insoluble			
Coefficient of Thermal Expansion: per °F 0.00135					
per °C 0.00243					
3. HAZARD DATA					
Flashpoint: 486 °F (252°C) CC		FPA Hazard Classification			
Flammability Limits in Air, Volume %: Unavailable					
Autoignition Temperature: 650°F (343°C)					
Threshold Limit Value (TLV), ppm:					
Short-Term Inhalation Limits:					
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.			
EXPOSURE		HARM		ACTION	
INHALED		Because of low vapor pressure, no harm at normal temperatures.			
SWALLOWED		None			
ON SKIN		None			
IN EYES		May irritate eyes.		Flush with water for 15 minutes.	

COTTONSEED OIL

5. PROTECTIVE MEASURES IN HANDLING

Have adequate ventilation.
Keep containers closed and away from heat, sparks and open flame.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
Absorb residual by Vermiculite or other solid absorbent and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible
Aluminum - compatible
Brass - noncompatible
Stainless Steel - compatible
Compatibility Chart No. 13

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron
Hoses - Polyethylene crosslinked; Butyl
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.
Since heating is required to make the product pumpable, heat-coiled and/or insulated tanks and heat-traced piping and pumps will be required.
Avoid overheating.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-7

Drain tank, wash with detergent and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

094

1. COMMODITY		SIGNAL WORD	
COCONUT OIL		ATTENTION	
COMMON SYNONYMS AND TRADE NAMES Coconut palm oil Coconut butter		DESCRIPTION White, semi-solid fat Characteristic odor Floats on water	CHEMICAL FORMULA Mixture of fatty acids
			MOLECULAR WEIGHT Mixture
2. PHYSICAL PROPERTIES			
Freezing Point: 68-77 °F (20-25°C) Vapor Pressure: 3.5 psia (77.8 mm Hg) @ °F (°C)			
Boiling Point: >392 °F (200°C) 2.5 psia (129 mm Hg) @ °F (°C)			
Density [Spec. Gravity] at 68°F (20°C): 7.7 lbs/gal (0.92) 11.0 psia (569 mm Hg) @ °F (°C)			
Kinematic Viscosity, at 77°F (25°C): SSU 119 (25 cSt) approx. at 68°F (20°C) <0.1 psia (<5 mm Hg)			
at 100°F (38 °C): SSU 140-148 (30-32 cSt)			
Specific Heat, Btu/lb. °F (cal/g °C): approx. 0.5 Solubility in Water, %: Negligible			
Coefficient of Thermal Expansion: per °F Solubility of Water in Commodity, %: 0.1			
per °C			
3. HAZARD DATA			
Flashpoint: 420 °F (215°C) CC; 520°F (271°C) CC			
Flammability Limits in Air, Volume %: Not established			
Autoignition Temperature: °F (°C)			
Threshold Limit Value (TLV), ppm: Not established			
Short-Term Inhalation Limits:			
Odor Threshold, ppm:			
NFPA Hazard Classification (Estimated)			
Health			
Flammability			
Reactivity			
4. HAZARD ACTION			
FIRE			
Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.			
EXPOSURE			
HARM			
ACTION			
INHALED			
Because of low vapor pressure, no harm at normal temperatures.			
SWALLOWED			
None			
ON SKIN			
None			
IN EYES			
May irritate eyes.			
Flush with water for 15 minutes.			

5. PROTECTIVE MEASURES IN HANDLING S-0

Have adequate ventilation.
Keep containers closed and away from heat.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.
Absorb residual by Vermiculite or other solid absorbent and transport for final disposal.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - compatible
Aluminum - compatible
Brass - compatible
Stainless Steel - compatible
Compatibility Chart No. 13

b. Preferred Materials for:

Tanks - steel
Pipes - steel
Pumps - all-iron or bronze fitted
Hoses - Polyethylene crosslinked; Butyl
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks.
Since heating is required to make the product flow readily, heat-coiled and/or insulated tanks and heat-traced piping and pumps may be required.
Avoid overheating since product is somewhat heat sensitive.

10. LABELING REQUIREMENTS

None required.

11. CLEANING PROCEDURES

CP-7 or CP-8

Drain tank, wash with detergent or caustic solution, air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

1. COMMODITY		<h1>CAUSTIC SODA SOLUTION</h1> <p>(50%, 73%)</p>		SIGNAL WORD DANGER	
COMMON SYNONYMS AND TRADE NAMES		DESCRIPTION		CHEMICAL FORMULA	
Sodium hydroxide solution Lye		Thick, colorless liquid Odorless Sinks and mixes with water		NaOH in water	
				MOLECULAR WEIGHT	
2. PHYSICAL PROPERTIES (50% Solution)					
Freezing Point: 41°F (5°C); crystallization begins at 54-59°F (12-15°C)		Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 70°F (21°C)			
Boiling Point: 288-298°F (142-148°C)		of water 2.5 psia (129 mm Hg) @ 70°F (21°C)			
Density (Spec. Gravity) at 68°F (20°C): 12.7 lbs/gal (1.52)		over solution 11.0 psia (569 mm Hg) @ 70°F (21°C)			
Kinematic Viscosity, at 77°F (25°C): SSU 251 (54 cSt)		at 68°F (20°C) 0.72 psia (6.3 mm Hg)			
Specific Heat, Btu/lb. °F (cal/g °C): 0.79		Solubility in Water, %: In all proportions			
Coefficient of Thermal Expansion: per °F		Solubility of Water in Commodity, %: In all proportions			
per °C					
3. HAZARD DATA					
Flashpoint: None		NFPA Hazard Classification		Flammability	
Flammability Limits in Air, Volume %: None				Reactivity	
Autoignition Temperature: None					
Threshold Limit Value (TLV), ppm: 2 mg/m ³ (in the form of mist or spray)					
Short-Term Inhalation Limits:					
Odor Threshold, ppm:					
4. HAZARD ACTION					
FIRE		Not Flammable.			
EXPOSURE		HARM		ACTION	
INHALED		Inhalation of mist or spray irritating to nose and throat and will cause coughing and choking, inflammation of the lungs.		Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, apply artificial respiration. Get medical attention if all effects noticed.	
SWALLOWED		Poisonous if swallowed. Ingestion will cause burning pain of mouth, throat and stomach, nausea, bloody vomiting, swelling of throat with possible suffocation, shock, coma, and possible death. About one ounce may cause death.		Act quickly. Do NOT induce vomiting. Have victim drink milk, water, juices or diluted vinegar. Get medical attention immediately.	
ON SKIN		Causes severe burns. Although no pain may be felt immediately, caustic begins to dissolve skin on contact.		Act quickly. Remove contaminated clothing. Immediately wash affected areas with water. Launder contaminated clothing before reuse. Get medical attention immediately.	
IN EYES		Causes severe eye burns. May cause blindness.		Immediately flush eyes with water for 15 minutes. Get medical attention immediately.	

CAUSTIC SODA SOLUTION

5. PROTECTIVE MEASURES IN HANDLING S-3

Have adequate ventilation.
Avoid breathing of mist or spray.
Avoid contact with skin.
Keep containers closed.
Wear protective goggles or face shield, impervious gloves and impervious overclothing.

6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.
Notify plant operations officer.
Notify U.S. Coast Guard and local health and pollution control agencies, if required.

7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment.
Flush residual with water and dilute with large excess of water before discharge, or neutralize with a weak acid solution, such as diluted acetic acid.

8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - noncompatible when stored at elevated temperature
Aluminum - noncompatible
Brass - noncompatible
Stainless Steel, 316 - compatible to about 200°F

Compatibility Chart No. 3

Causes stress corrosion cracks in steel above 118°F (48°C) and in 18-8 stainless at higher temperatures. Causes pits in copper containing alloys. Reacts violently with aluminum, zinc and tin liberating hydrogen gas that may cause explosions. Slowly dissolves copper, iron which may cause unacceptable discoloration and contamination for some uses.

b. Preferred Materials for:

Tanks - Steel see Temp. Limitations
Internally lined steel; Stainless 316
Pipes - stainless steel 316
Pumps - all-iron; nickel alloy
Hoses - Polyethylene crosslinked; Butyl; Natural rubber
Gaskets - JM-60

9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum or open vents required on fixed roof tanks.
Because of high solidification temperature, it is stored at elevated temperatures (particularly the 73% solution); thus, heat coiled tanks and heat-traced piping and pumps will be required. Heat exchanger, external, nickel or kaniogen plated for pumpout heat-up to provide safety factor against crystallization during transit.

10. LABELING REQUIREMENTS

Corrosive liquid.

11. CLEANING PROCEDURES

CP-5

Drain tank, flush with water, remove solution and air dry.

(Details of the cleaning procedure are given in Appendix)

12. MISCELLANEOUS

Physical properties of 73% caustic solution are:

Freezing Point: 145°F (63°C); solidifies at 144°F (62°C)

Boiling Point: 370-388°F (188-198°C)

Density (Sp. gravity) at 68°F (20°C): 14.7 lb/gal (1.76)

Both 50% and 73% caustic solutions are hygroscopic and deliquescent.

Addition of water generates heat; thus, boiling and spattering of hot caustic solution may result.

If dilution is required, add caustic soda solution slowly to cold water.

CHEM-CLEAR®

Form No. LAS 3/82

11800 S. Stony Island Avenue
Chicago, Illinois 60617
(312) 646-6202

CHI #410

WASTE SOURCE Liquid Dynamics
WASTE GENERATOR Hannah Marine
WASTE DESCRIPTION Caustic Wash Water
RECEIPT DATE 6/3/82

VOLUME

WASTE CHARACTERISTICS

COLOR/APPEARANCE Brown/Clear WATER MISCIBILITY Yes
% FLOATER ND % OIL ON ACIDIFICATION 0
% FREE OIL ND

TEST	As Rec.	LEACH.	TEST	As Rec.	LEACH.
PH	12.9		Ag, ppm	.1	
% TOTAL SOLIDS	11.77		As, ppm	< .1	
% DISSOLVED SOLIDS			Ba, ppm	ND	
% SUSPENDED SOLIDS	0.11		Cd, ppm	ND	
% SETTLEABLE SOLIDS	ND		Cr, ppm	ND	
FLASH POINT °C			Cr (Hex), ppm	.7	
OIL AND GREASE, ppm	296		Cu, ppm		
PHENOLS, ppm	4.75		Hg, ppb	26	
CHLORIDE, ppm			Ni, ppm	ND	
BROMIDE, ppm			Pb, ppm	2.0	
PHOSPHATE, ppm (TOTAL)			Se, ppm	< .2	
COD, ppm	45,072		Zn, ppm	1.25	
BOD, ppm			Fe, ppm	20.0	
ACIDITY mg/l as CaCO ₃			B, ppm		
ALKALINITY, mg/l as CaCO ₃					
CYANIDE, ppm (TOTAL)	1.25				
CYANIDE, ppm (RELEASE)					
SULFIDE, ppm (TOTAL)	15.5				
SULFIDE, ppm					

TREATMENT CHARACTERISTICS

NEUTRALIZATION EQUIVALENT (pH 10)

TREATMENT WITH MIX TANK

(m1 WASTE + m1 MIX TANK)

TEST	MIX TANK	MIX + Sample	TEST	MIX TANK	MIX + Sample
% SOLIDS Produced by Volume			IRON, ppm		
% SOLIDS Produced by Weight			NICKEL, ppm		
COD, ppm			ZINC, ppm		
CYANIDE (TOTAL), ppm			O&G, ppm		
CYANIDE (RELEASABLE), ppm			COPPER, ppm		
BARON, ppm			LEAD, ppm		
CADMIUM, ppm			MERCURY, ppb		
CHROMIUM (TOTAL), ppm					
CHROMIUM (HEX), ppm					

ACCEPTED:

REJECTED:

COMMENTS

SPECIAL WASTE ANALYSIS REPORT

RVD

030101

WASTE PROFILE SHEET CODE

LABORATORY: Technical Center

PROFILE SHEET RECEIVED ON: 11/20/81 REPRESENTATIVE SAMPLE RECEIVED ON: 11/20/81

CERTIFICATE OF REP. SAMPLE RECEIVED: 11/20/81 SAMPLE TAKEN: 11/16/81

PROPOSED TREATMENT/DISPOSAL FACILITY: Chicago/CID

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK (*).

DATE OF ANALYSIS: 11-30-81 LAB MANAGER: John W. Kolesan

6184 Hannah Inland Waterways

Test	As Received	Leachate	Analyst Initials	Test	As Received	Leachate	Analyst Initials
Specific Gravity							
pH	11.5						
Acidity, % as							
Alkalinity, % as NH_4OH	0.4 %		HR	Phenols, mg/l	10.0		
C O D, mg/l				Cyanides, as CN, Total, mg/l	<10.0		
B O D, mg/l				Cyanides, as CN, Free, mg/l			
Total Solids @ 105°C	23.12%						
Total Dissolved Solids, mg/l				Nitrogen, Ammonia, as N, mg/l			
Total Suspended Solids, mg/l				Nitrogen, Organic, as N, mg/l			
Residue on Evaporation @ 180°C				Total Kjeldahl Nitrogen, as N, mg/l			
Flash Point, F°	>212.			Total Alkalinity (P), as CaCO_3 , mg/l			
Ash Content, on ignition	17.07%			Total Alkalinity (M), as CaCO_3 , mg/l			
Heating Value, BTU/lb				Total Hardness, as CaCO_3 , mg/l			
"Acid Scrub," gNaOH/g				Calcium Hardness, as CaCO_3 , mg/l			
				Magnesium Hardness, as CaCO_3 , mg/l			
Arsenic, as AS, mg/l	3.20						
Barium, as Ba, mg/l	326.						
Boron, as B, mg/l				Oil and Grease, mg/l			
Cadmium, as Cd, mg/l	1.13						
Chromium, Total as Cr, mg/l	7.39						
Hexavalent Chromium @ Cr, mg/l				Aldrin, mg/l			
Copper, as Cu, mg/l	6.32			Chlordane, mg/l			
Iron, Total as Fe, mg/l				DDT's, mg/l			
Iron, dissolved, as Fe, mg/l				Dieldrin, mg/l			
Lead, as Pb, mg/l	26.8			Endrin, mg/l			
Manganese, as Mn, mg/l				Heptachlor, mg/l			
Magnesium, as Mg, mg/l				Lindane, mg/l			
Mercury, as Hg, mg/l	2.12			Methoxychlor, mg/l			
Nickel, as Ni, mg/l	2.91			Toxaphene, mg/l			
Selenium, as Se, mg/l	1.46			Parathion, mg/l			
Silver, as Ag, mg/l	0.46			2, 4, D, mg/l			
Zinc, as Zn, mg/l	16.4			2, 4, 5, TP (Silvex), mg/l			
				PCB's, mg/l			
Bicarbonates, as HCO_3 , mg/l							
Carbonates, as CO_3 , mg/l							
Chlorides, as Cl, mg/l							
Fluorides, as F, mg/l							
Nitrate, as NO_3 , mg/l							
Nitrite, as NO_2 , mg/l							
Phosphate, as P, mg/l							
Sulfate, as SO_4 , mg/l							
Sulfides, as S, mg/l	discovered <2.0						

New Application
Renewal ☒ 800302
Additional Site ☐

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
SPECIAL WASTE DISPOSAL APPLICATION

FOR AGENCY USE Log # _____
THIS APPLICATION FOR WASTE:
Treatment _____
Disposal _____
Storage _____

CARD TYPE DATE 2/26/82 L P S W C AUTHORIZATION NUMBER _____ TRANS CODE _____ DATE ENTERED (Agency Use) _____

WASTE HAULER

HAULER REGISTRATION NUMBER 0075 NAME Chemical Waste Mgt. of Illinois
ADDRESS P.O. Box 1296 COMMUNITY Calumet City
COUNTY Cook STATE IL ZIP 60409 AREA CODE 312 TELEPHONE 8911500

WASTE GENERATOR

GENERATOR CODE 0311620011 NAME Hannah Inland Waterways
ADDRESS P.O. Box 189 COMMUNITY Lemont
COUNTY Cook STATE IL ZIP 60439 AREA CODE 312 TELEPHONE 257 5456
GENERATOR CONTACT NAME Mayank Huns Jain
DUNS NUMBER _____ SIC CODE _____ USEPA GEN. CODE ILD069496248

PROCESS NAME Barge Line Pond

WASTE CHARACTERISTICS

GENERIC WASTE NAME Caustic Waste Water (NH₄OH)
IUPAC WASTE NAME _____
TOTAL ANNUAL WASTE VOLUME 1000000 VOLUME UNITS 2 WASTE PHASE 3
TRANSPORT FREQUENCY 3 WASTE CLASS (Agency Use) _____
1 = ONE TIME 5 = MONTHLY 1 = CUBIC YARDS 1 = SOLID
2 = DAILY 6 = BI-MONTHLY 2 = GALLONS 2 = SEMI-SOLID
3 = WEEKLY 7 = QUARTERLY 3 = LIQUID
4 = BI-WEEKLY 8 = SEMI-ANNUALLY 4 = GAS

(Code either "1" for Low, "2" for Medium, or "3" for High as appropriate for columns 21 through 26):

INHALATION TOXICITY 2 DERMAL TOXICITY 2 INGESTIVE TOXICITY 2 INFECTIOUS _____ REACTIVITY _____ EXPLOSIVE _____
FLASH POINT 212°F ALPHA RADIATION _____ (pCi/L) _____ COMPOSITION 2
1 = ORGANIC
2 = INORGANIC

PERCENT ACIDITY _____ PERCENT ALKALINITY 0.4 PH 11.5 PERCENT TOTAL SOLIDS 23.12 PERCENT ASH CONTENT 17.07%

KEY COMPONENT NAME	PERCENT	KEY COMPONENT NAME	PERCENT
1 WATER	76.5	2 INORGANIC SALTS	17.1
3 OIL & GREASE	6.0	4 AMMONIUM HYDROXIDE	0.4
5		6	

USEPA HAZARDOUS WASTE NO. D002
(If Hazardous)

CARD TYPE DATE 2/26/82 L P S W C AUTHORIZATION NUMBER 8 13 TRANS CODE 14 DATE ENTERED (Agency Use) 15 16 / 17 18 / 19 20

WASTE CHARACTERISTICS

METAL KEY	TOTAL	(PPM)	EP TOXICITY	(PPM)	METAL KEY	TOTAL	(PPM)	EP TOXICITY	(PPM)
CN ⁻	21	23	10.0	30 31	Cu	39	41	6.3	48 49
Ag			0.5		Hg			2.1	
As			3.2		Ni			2.9	
Ba			326.0		Pb			26.8	
Cd			1.1		Se			1.5	
Cr			7.4		Zn			16.4	
PHENOL			10.0		S ⁼			2.0 (Dissolved)	
ENDRIN					2 - 4 D				
LINDANE					2,4,5 - TP				
METHOXYCHLOR					TOXAPHENE				

LABORATORY NAME Chemical Waste Management of Illinois-Tech Center

CERTIFICATION NUMBER

REVIEWED BY:

1 SITE CODE 03160030 SITE NAME Chicago/CID

DISPOSAL METHOD 01 NEUTRALIZATION METHOD

SIGNATURE (SITE OWNER)

SIGNATURE William R. Koppas (SITE OPERATOR)

STATUS START DATE / / EXPIRATION DATE / /

2 SITE CODE SITE NAME

DISPOSAL METHOD NEUTRALIZATION METHOD

SIGNATURE (SITE OWNER)

SIGNATURE (SITE OPERATOR)

STATUS START DATE / / EXPIRATION DATE / /

3 SITE CODE SITE NAME

DISPOSAL METHOD NEUTRALIZATION METHOD

SIGNATURE (SITE OWNER)

SIGNATURE (SITE OPERATOR)

STATUS START DATE / / EXPIRATION DATE / /

4 SITE CODE SITE NAME

DISPOSAL METHOD NEUTRALIZATION METHOD

SIGNATURE (SITE OWNER)

SIGNATURE (SITE OPERATOR)

STATUS START DATE / / EXPIRATION DATE / /

The analytical data present in this report is the result of analysis made, and using only the methods and procedures specified in this report. It is the responsibility of the operator that other components or characteristics are not present in the sample, or that other waste samples or other analytical methods or procedures will not yield different analytical results.

CWM #5103

Renewal Permit #800302

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
SPECIAL WASTE DISPOSAL APPLICATION

PERMIT ISSUED

HAZARDOUS

CARD TYPE DATE 1/29/81 L P S M C AUTHORIZATION NUMBER 800302 TRANS CODE C DATE ENTERED (Agency Use) 02/02/81

WASTE HAULER

HAULER REGISTRATION NUMBER 0075 NAME Chemical Waste Management of Illinois
ADDRESS P.O. Box 1296 COMMUNITY Calumet City
COUNTY Cook STATE Ill. ZIP 60409 AREA CODE 312 TELEPHONE 8911500

WASTE GENERATOR

GENERATOR CODE 0311620011 NAME Hannah Inland Waterways
ADDRESS P.O. Box 189 COMMUNITY Lemont
COUNTY Cook STATE Ill. ZIP 60439 AREA CODE 312 TELEPHONE 257 5456GENERATOR CONTACT NAME Dino Fabbre

DUNS NUMBER _____ SIC CODE _____

PROCESS NAME Barge Line Pond

WASTE CHARACTERISTICS

GENERIC WASTE NAME Caustic Waste Water (NH₄OH)

IUPAC WASTE NAME _____

TOTAL ANNUAL WASTE VOLUME 1000000 VOLUME UNITS 2 WASTE PHASE 3TRANSPORT FREQUENCY 3 WASTE CLASS 04 1 = CUBIC YARDS 1 = SOLID2 = DAILY 5 = MONTHLY 2 = SEMI-SOLID
3 = WEEKLY 6 = BI-MONTHLY 3 = LIQUID
4 = BI-WEEKLY 7 = QUARTERLY 4 = GAS
8 = SEMI-ANNUALLY

(Code either "1" for Low, "2" for Medium, or "3" for High as appropriate for columns 21 through 25):

INHALATION TOXICITY 2 DERMAL TOXICITY 2 INGESTIVE TOXICITY 3 INFECTIOUS 3 REACTIVITY 3 EXPLOSIVE 3FLASH POINT 212°F ALPHA RADIATION 3 (pCi/L) COMPOSITION 21 = ORGANIC
2 = INORGANICPERCENT ACIDITY _____ PERCENT ALKALINITY 2.1 pH 12.9 PERCENT TOTAL SOLIDS 21.62 ash content 16.50%

KEY COMPONENT NAME	PERCENT	KEY COMPONENT NAME	PERCENT
1 WATER	76.3	2 Ca + Na SALTS	16.5
3 OIL + GREASE	5.1	4 AMMONIUM HYDROXIDE	2.1
5		6	
7		8	

RECEIVED

FEB 02 1981

CARD TYPE DATE 1/29/81 L P S M C AUTHORIZATION NUMBER TRANS CODE DATE ENTERED (Agency Use)

WASTE CHARACTERISTICS

METAL KEY	TOTAL (PPM)	LEACH (PPM)	METAL KEY	TOTAL (PPM)	LEACH (PPM)
CN	0.1		Cu	0.2	
Ag	0.3		Hg	0.4	
As	0.5		Ni	0.6	
Ba	0.7		Pb	0.8	
Cd	0.9		Se	1.0	
Cr	1.1		Zn	1.2	
PHENOL	1.3		"S	1.4	

LABORATORY NAME Chemical Waste Management of Illinois CERTIFICATION NUMBER REVIEWED BY: 44⁰⁰, Rama K. Chaturvedi

SITE CODE 03160030 SITE NAME Chicago/CID
 DISPOSAL METHOD 01 NEUTRALIZATION METHOD
 STATUS K START DATE 02/26/81 EXPIRATION DATE 02/26/82
 SIGNATURE (SITE OWNER) SIGNATURE William R. Karpas (SITE OPERATOR)

SITE CODE SITE NAME
 DISPOSAL METHOD NEUTRALIZATION METHOD
 STATUS START DATE EXPIRATION DATE
 SIGNATURE SIGNATURE
 (SITE OWNER) (SITE OPERATOR)

SITE CODE SITE NAME
 DISPOSAL METHOD NEUTRALIZATION METHOD
 STATUS START DATE EXPIRATION DATE
 SIGNATURE SIGNATURE
 (SITE OWNER) (SITE OPERATOR)

SITE CODE SITE NAME
 DISPOSAL METHOD NEUTRALIZATION METHOD
 STATUS START DATE EXPIRATION DATE
 SIGNATURE SIGNATURE
 (SITE OWNER) (SITE OPERATOR)

SITE CODE SITE NAME
 DISPOSAL METHOD NEUTRALIZATION METHOD
 STATUS START DATE EXPIRATION DATE
 SIGNATURE SIGNATURE
 (SITE OWNER) (SITE OPERATOR)

Physical appearance:
 Amber, opaque, low-viscosity liquid;
 with some beige sediment on bottom.
 Amine odor.

[REDACTED]
- RESPONSE NO. 4 -

20

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY GENERATOR ANNUAL HAZARDOUS WASTE REPORT

20

This report is for the calendar year ending December 31, 1986

FOR AGENCY USE

L P H W C

CARD
TYPE

FOR AGENCY USE ONLY

2 0

TRANS
CODE

A

DATE
ENTERED

/ /

14

GENERAL INSTRUCTIONS

REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLET BEFORE COMPLETING THIS FORM.

The information requested in this report is required by Federal and State law.

Please print/type with elite type (12 characters per inch)

I. NON-REGULATED STATUS

Complete this section only if you did not generate regulated quantities of hazardous waste at any time during the calendar year covered by this report. Circle the one number, code 1 thru 5 that best describes your status during the entire year. See instructions for explanation of codes, and explain in Comment Section.

1 No Hazardous Waste Shipped Off-Site

2 Small Quantity Generator

3 Exempt

4 Beneficial Use

5 Closed

B. This installation's Non-Regulated Status is expected to apply:

6 For 1986 only, explain in Comment Section.

7 Permanently, explain in Comment Section.

8 Other, explain in Comment Section.

II. REGULATED STATUS

See instructions for completing this and following sections.

III. GENERATOR'S USEPA I.D. NUMBER

I L D 0 6 9 4 9 6 2 4 8

IV. GENERATOR'S ILLINOIS I.D. NUMBER

0 4 3 8 0 2 0 0 0 4

V. NAME OF INSTALLATION

HANNAH MARINE CORPORATION, SHIPYARD DIVISION

VI. INSTALLATION MAILING ADDRESS

ROUTE 83 & ARCHER AVENUE

Street or P.O. Box

LEMONT

City or Town

IL 60439

State Zip Code

VII. LOCATION OF INSTALLATION (if different than section VI above)

ROUTE 83 & ARCHER AVENUE

Street or Route number

LEMONT

City or Town

IL 60439

State Zip Code

VIII. INSTALLATION CONTACT

VOTAVA, GEORGE

Name (last and first)

(312) 257-5457

Phone No. (area code & no.)

This Agency is authorized to require the information under Illinois Revised Statutes, 1981, Chapter 11-1.2, Sections 1004 and 1021 (a)(2). Disclosure of this information is required failure to do so may result in a civil penalty up to \$35,000 for each day the failure continues, a fine up to \$1,000,000 and imprisonment up to 5 years. This form has been approved by the Toxic Management Center.

IX. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

GEORGE VOTAVA, MGR. SHIPYARD DIV.

Print Type Name

Title

Signature of Authorized Representative

2-18-87

Date Signed

Page 0101 of 3

File 009 496 244
GENERAL HANNAH MARINE CORP
SHIPYARD DIVISION
ROUTE 83 & ARCHER AVENUE
LEMONT, ILL 60439
60521

50

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

50

This report is for the calendar year ending December 31, 1986

(cont.)

FOR AGENCY USE LIPHWIC

FOR AGENCY USE ONLY

CARD TYPE 50TRANS CODE A02 / 28 / 87

X. GENERATOR'S USEPA ID. NO.

XL GENERATOR'S ILLINOIS EPA ID. NO.

XIL FACILITY'S USEPA ID. NO.

111D0694962480438020004111D000608471

XIII. FACILITY'S ILLINOIS EPA I.D. NO.

XIV. FACILITY'S NAME / ADDRESS

03116000051Name CHEM CLEARPhone 312 / 646-6202

XV. WASTE IDENTIFICATION

11800 S. STONY ISLAND AVE. CHICAGOIL 60617

A. LINE NO.	B. DESCRIPTION OF WASTE	C. UNDOT Hazard Code	D. RCRA HAZARDOUS WASTE NO. (see instructions)	E. AMOUNT OF WASTE (gallons only)	F. DENSITY (lbs. / gal.)
<u>01001</u>	WASTE ALKALINE SOLUTION		<u>D002</u>	<u>010141418151010</u>	<u>01815</u>
<u>01002</u>					
<u>01003</u>					
<u>01004</u>					
<u>01005</u>					
<u>01006</u>					
<u>01007</u>					
<u>01008</u>					
<u>01009</u>					
<u>01010</u>					

XVII. PAGE NUMBER 0102

117

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GENERATOR ANNUAL HAZARDOUS WASTE REPORT

20

This report is for the calendar year ending December 31, 1985

FOR AGENCY USE ONLY		FOR AGENCY USE ONLY		DATE ENTERED	
FOR AGENCY USE	L P H W C	CARD TYPE	TRANS CODE	A	9 / /
1	3	2 0	6 7	8	14

GENERAL INSTRUCTIONS

REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLET BEFORE COMPLETING THIS FORM.

The information requested in this report is required by Federal and State law.

Please print/type with elite type (12 characters per inch)

I. NON-REGULATED STATUS

- A. Complete this section only if you did not generate regulated quantities of hazardous waste at any time during the calendar year covered by this report. Circle the one numeric code (1 thru 5) that best describes your status during the entire year (see instructions for explanation of codes), and explain in Comment Section.

- 1 Non-handler
2 Small Quantity Generator
3 Exempt
4 Beneficial Use
5 Closed

- B. This installation's Non-Regulated Status is expected to apply:

- 6 For 1985 only, explain in Comment Section.
7 Permanently, explain in Comment Section.
8 Other, explain in Comment Section.

II. REGULATED STATUS

See instructions for completing this and following sections.

III. GENERATOR'S USEPA ID. NUMBER

IV. GENERATOR'S ILLINOIS ID. NUMBER

1 1 1 1 1 0 1 6 1 9 1 4 1 9 1 6 1 2 1 4 1 8

1 0 4 1 3 8 0 2 0 0 0 4

V. NAME OF INSTALLATION

HANNAH MARINE CORPORATION, SHIPYARD DIVISION

VI. INSTALLATION MAILING ADDRESS

361 FRONTAGE ROAD, SUITE 101

Street or P.O. Box

BURR RIDGE

City or Town

IL 60521

State Zip Code

VII. LOCATION OF INSTALLATION (if different than section VI above)

RT. 83 AND 107TH STREET

Street or Route number

LEMONT

City or Town

IL 60439

State Zip Code

VIII. INSTALLATION CONTACT

VOTAVA, GEORGE

Name (last and first)

(312) 257-5457

Phone No. (area code & no.)

This Agency is authorized to require this information under Illinois Revised Statutes, 1981, Chapter 11-1/2, Sections 1004 and 1021 (1/2). Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues, a fine up to \$1,000,000.00 and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

IX. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

George Votava, Mgr. Shipyard Div.

Print/Type Name

Title

Signature of Authorized Representative

1-29-86

Date Signed

Page 0011 of 40 42

60521
RUPR RTUCE
701 FRONTAGE RD-SUITE 101
HANNAH MARINE CORP
GENERAL MANAGER
249 496 493 40200 04

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
GENERATOR ANNUAL HAZARDOUS WASTE REPORT

50

This report is for the calendar year ending December 31, 1985

(cont.)

FOR AGENCY USE ONLY		FOR AGENCY USE ONLY		DATE ENTERED	
1	2	3	4	5	6
1	2	3	4	5	6
X. GENERATOR'S USEPA ID. NO.		XI. GENERATOR'S ILLINOIS EPA ID. NO.		XII. FACILITY'S USEPA ID. NO.	
131101619141916121418		101413181012101014		1111101010161018141711	
18 29		30 39		41 52	
XIII. FACILITY'S ILLINOIS EPA ID. NO.		XIV. FACILITY'S NAME / ADDRESS			
101311161010101511		Name: CHEM CLEAR			
53 62		Phone: (312) 646-6202			
XV. WASTE IDENTIFICATION		11800 S. STONY ISLAND, CHICAGO IL 60617			
		Street (P.O. Box) City State Zip			

A. LINE NO.	B. DESCRIPTION OF WASTE	C. USDOT HAZARDOUS MATERIAL NO.	D. RCRA HAZARDOUS WASTE NO. (see instructions)	E. AMOUNT OF WASTE (gallons only)	F. DENSITY (lbs. / gal.)
01001	WASTE ALKALINE SOLUTION	67 68	69 72 73 76 77 80 81 84	85 93 94 96	98.5
01002		67 68	69 72 73 76 77 80 81 84	85 93 94 96	
01003		67 68	69 72 73 76 77 80 81 84	85 93 94 96	
01004		67 68	69 72 73 76 77 80 81 84	85 93 94 96	
01005		67 68	69 72 73 76 77 80 81 84	85 93 94 96	
01006		67 68	69 72 73 76 77 80 81 84	85 93 94 96	
01007		67 68	69 72 73 76 77 80 81 84	85 93 94 96	
01008		67 68	69 72 73 76 77 80 81 84	85 93 94 96	
01009		67 68	69 72 73 76 77 80 81 84	85 93 94 96	
01010		67 68	69 72 73 76 77 80 81 84	85 93 94 96	

XVII. PAGE NUMBER 992

$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
GENERATOR ANNUAL HAZARDOUS WASTE REPORT

20

This report is for the calendar year ending December 31, 1984.

FOR AGENCY USE

L P H W C
1 5CARD
TYPE

FOR AGENCY USE ONLY

2 0
6 7TRANS
CODEA
8DATE
ENTERED/ /
9 14

GENERAL INSTRUCTIONS

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I. NON-REGULATED STATUS

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1 Non-handler

2 Small Quantity Generator

3 Exempt

4 Beneficial Use

5 Closed

This installation's Non-Regulated Status is expected to apply:

6 For 1984 only, explain in Comment Section.

7 Permanently, explain in Comment Section.

8 Other, explain in Comment Section.

II. REGULATED STATUS

See instructions for completing this and following sections.

III. GENERATOR'S USEPA I.D. NUMBER

IV. GENERATOR'S ILLINOIS I.D. NUMBER

111101061941916121418

101413181010101014

V. NAME OF INSTALLATION

HANNAH MARINE CORPORATION, SHIPYARD DIVISION

VI. INSTALLATION MAILING ADDRESS

361 FRONTAGE ROAD, SUITE 101

Street or P.O. Box

BURR RIDGE

IL 60521

City or Town

State Zip Code

VII. LOCATION OF INSTALLATION (if different than section VI above)

RT 83 AND 107TH STREET

Street or Route number

LEMONT

IL 60439

City or Town

State Zip Code

VIII. INSTALLATION CONTACT

VOTAVA, GEORGE

Name (last and first)

{312} 257-5457

Phone No. (area code & no.)

This Agency is authorized to require this information under Illinois Revised Statutes, 1981, Chapter 11-1.2, Sections 1004 and 1021 (11x2). Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues, a fine up to \$1,000,000.00 and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

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George Votava, Mgr., Shipyard Div.

Print/Type Name

Title

Signature of Authorized Representative

2-26-85

Date Signed

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

50

This report is for the calendar year ending December 31, 1984.

(cont.)

FOR AGENCY USE

L P H W C

CARD
TYPE

5 0

TRANS
CODE

A

DATE
ENTERED

/ /

FOR AGENCY USE ONLY

X. GENERATOR'S USEPA I.D. NO.

XI. GENERATOR'S ILLINOIS EPA I.D. NO.

XII. FACILITY'S USEPA I.D. NO.

1 1 1 0 1 6 1 9 1 4 1 9 1 6 1 2 1 4 8

1 0 1 4 1 3 1 8 1 0 1 2 1 0 1 0 1 4

1 1 1 0 1 0 1 0 1 6 1 0 1 8 1 4 1 7 1 1

XIII. FACILITY'S ILLINOIS EPA I.D. NO.

XIV. FACILITY'S NAME / ADDRESS

1 0 1 3 1 6 0 0 0 0 9 1

Name CHEM CLEAR

Phone 312 646-6202

XV. WASTE IDENTIFICATION

11800 S. STONY ISLAND CHICAGO

IL

60617

Street (P.O. Box)

City

State

Zip

A. LINE NO.	B. DESCRIPTION OF WASTE	C. UNDOT Hazard Code	D. RCRA HAZARDOUS WASTE NO. (see instructions)	E. AMOUNT OF WASTE (gallons only)	F. DENSITY (lbs. / gal.)
0 0 0 1 63 66	WASTE ALKALINE SOLUTION	67 68	0 1 0 1 2 69 72 73 76 77 80 81 84	9 7 6 4 9 0 85 93 94 96	0 8 . 5 93 94 96
0 0 0 2 63 66		67 68	69 72 73 76 77 80 81 84		
0 0 0 3 63 66		67 68	69 72 73 76 77 80 81 84		
0 0 0 4 63 66		67 68	69 72 73 76 77 80 81 84		
0 0 0 5 63 66		67 68	69 72 73 76 77 80 81 84		
0 0 0 6 63 66		67 68	69 72 73 76 77 80 81 84		
0 0 0 7 63 66		67 68	69 72 73 76 77 80 81 84		
0 0 0 8 63 66		67 68	69 72 73 76 77 80 81 84		
0 0 0 9 63 66		67 68	69 72 73 76 77 80 81 84		
0 0 1 0 63 66		67 68	69 72 73 76 77 80 81 84		

XVII. PAGE NUMBER

0 0 2

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

20

This report is for the calendar year ending December 31, 1983.

FOR AGENCY USE

L P H W C

CARD
TYPE

2 0

TRANS
CODE

A

DATE
ENTERED

/ /

FOR AGENCY USE ONLY

GENERAL INSTRUCTIONS

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- 1 Non-handler
 2 Small Quantity Generator
 3 Exempt
 4 Beneficial Use
 5 Closed

This installation's Non-Regulated Status is expected to apply:

- 6 For 1983 only, explain in Comment Section.
 7 Permanently, explain in Comment Section.
 8 Other, explain in Comment Section.

II. REGULATED STATUS

See instructions for completing this and following sections.

III. GENERATOR'S USEPA I.D. NUMBER

IV. GENERATOR'S ILLINOIS I.D. NUMBER

1 1 1 1 0 1 6 1 9 1 4 1 9 1 6 1 2 1 4 1 8

0 3 1 1 1 6 2 0 0 1 1 9

V. NAME OF INSTALLATION

HANNAH MARINE CORPORATION SHIPYARD DIVISION

VI. INSTALLATION MAILING ADDRESS

361 FRONTAGE ROAD, SUITE 101

Street or P.O. Box

BURR RIDGE

IL 60521

City or Town

State Zip Code

VII. LOCATION OF INSTALLATION (if different than section VI above)

RT 83 AND 107TH STREET

Street or Route number

LEMONT

IL 60439

City or Town

State Zip Code

VIII. INSTALLATION CONTACT

WILSON, WILLIAM W.

Name (last and first)

312-257-5457

Phone No. (area code & no.)

This Agency is authorized to require this information under Illinois Revised Statutes, 1981, Chapter 88-1/2, Sections 1004 and 1021 (IX2). Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues, a fine up to \$1,000,000.00 and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

IX. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

WILLIAM W. WILSON VP & GEN. MGR.

Print Type Name

Title

Signature of Authorized Representative

Date Signed

Page 0101 of 40 42

HANNAH MARINE CORPORATION
 107 STREET & RT 83
 LEMONT
 IL 60439

50

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
GENERATOR ANNUAL HAZARDOUS WASTE REPORT

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This report is for the calendar year ending December 31, 1983.

(cont.)

FOR AGENCY USE ONLY

FOR AGENCY USE L P H W C CARD TYPE 5 0 TRANS CODE A DATE ENTERED / /

X. GENERATOR'S USEPA I.D. NO.

XI. GENERATOR'S ILLINOIS EPA I.D. NO.

XII. FACILITY'S USEPA I.D. NO.

1 1 1 1 0 1 6 9 4 9 6 2 4 81 0 1 3 1 1 1 6 2 0 0 1 1 1 G1 1 1 0 0 0 1 0 6 0 8 4 7 1

XIII. FACILITY'S ILLINOIS EPA I.D. NO.

XIV. FACILITY'S NAME / ADDRESS

1 0 1 3 1 1 6 2 0 0 1 1 1 GName Chem Clear Phone 312 646-620
Hannah Marine Corporation Phone 312 257-545711800 S. Stony Oak Ave., Chicago
Rt. 83 & 107th St., Lemont,IL 60617
60439

XV. WASTE IDENTIFICATION

Street (P.O. Box)

City

State

Zip

A. LINE NO.	B. DESCRIPTION OF WASTE	C. UNDOT Hazard Code	D. RCRA HAZARDOUS WASTE NO. (see instructions)	E. AMOUNT OF WASTE (gallons only)	F. DENSITY (lbs. / gal.)
61 64	WASTE ALKALINE SOLUTION	65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99
61 64		65 66	67 70 71 74 75 78 79 82	83 91 92 94	95 98 99

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

This report is for calendar year ending December 31, 1983 (cont.)

FOR AGENCY USE L P H W C CARD TYPE 6 D TRANS CODE A DATE ENTERED / /

XI. GENERATOR'S ILLINOIS EPA I.D. NO.

0 3 1 1 6 2 0 0 1 1 G

V.VI-GENERATOR'S NAME/ADDRESS

Name Hannah Marine Corporation

Phone (312) 257-5457

Rt. 83 & 107th Street
Street (P.O. Box)

Lemont
City

IL 60439
State Zip

XVIII. LIST OF TRANSPORTATION SERVICES (HAULERS) USED:

[illegible]

This report is for the calendar year ending December 31, 1982.

REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLET BEFORE COMPLETING THIS FORM.
The information requested in this report is required by Federal and State law.

Page 001 of ____

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

This report is for the calendar year ending December 31, 1982

FOR AGENCY USE ONLY		FOR AGENCY USE ONLY	
FOR AGENCY USE <u>L P H W C</u>	CARD TYPE <u>5 0</u>	TRANS CODE <u>A</u>	DATE ENTERED <u>06/23/83</u>

VII GENERATOR'S USEPA I.D. NO. VIII GENERATOR'S ILLINOIS EPA I.D. NO. IX FACILITY'S USEPA I.D. NO.

11LD069496248
18 29

03116200116
30 41

11LD0102842
51 62

X FACILITY'S ILLINOIS EPA I.D. NO. XI FACILITY'S NAME ADDRESS

03160056
53 60

Name C I D

Phone 312-891-1

XII. WASTE IDENTIFICATION

P.O. BOX 214 CALUMET CITY IL 60
Street (P.O. Box) City State

A. LINE NO.	B. DESCRIPTION OF WASTE	C. RCRA HAZARDOUS WASTE NO. (See instructions)	D. RCRA HAZARDOUS WASTE NO. (See instructions)	E. AMOUNT OF WASTE (gallons only)	F. DEN (lbs.)
<u>01001</u> 61 64	<u>CONTAMINATED DILUTED CAUSTIC WASTE WATER</u>	<u>02</u> 65 66	<u>0002</u> 67 70 71 74 75 78 79 82	<u>154000</u> 81 91 92	<u>8</u>
<u>01002</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		
<u>01003</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		
<u>01004</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		
<u>01005</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		
<u>01006</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		
<u>01007</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		
<u>01008</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		
<u>01009</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		
<u>01010</u> 61 64			<u>0002</u> 67 70 71 74 75 78 79 82		

This report is for the calendar year ending December 31, 1982.

FOR AGENCY USE LP HWC

CARD TYPE 50
b

TRANS CODE	A n
0000	0000
0001	0001
0010	0010
0011	0011
0100	0100
0101	0101
0110	0110
0111	0111
1000	1000
1001	1001
1010	1010
1011	1011
1100	1100
1101	1101
1110	1110
1111	1111

DATE ENTERED 06 / 23 / 83
4 14

- 1 L D 0 6 9 4 9 6 2 4 8

0311620011G

1 L T 0 0 0 6 0 8 4

03160051

Name: CHEM-CLEAR

Phone (312) 696-6

11800 S. STONY ISLAND AVE. CHICAGO IL 60606

129

XIV PAGE NI

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

This report is for the calendar year ending December 31, 1982

FOR AGENCY USE					FOR AGENCY USE ONLY										
L	P	H	W	C	CARD	8	0	TRANS	A	DATE		/		/	
1				5	TYPE	6	7	CODE	8	ENTERED	9				14

VII GENERATOR'S USEPA I.D. NO

VIII. GENERATOR'S ILLINOIS EPA I.D. NO.

1 L D 0 6 9 4 7 6 2 4 8
18 29

03116200116

XI. GENERATOR'S NAME / ADDRESS

Name HANNAH MARINE CORP.

Phone: 312. 257 545

P.O. Box 189
Street (P.O. Box)

Leimert
City

State IL Zip 60115

XIV. LIST OF TRANSPORTATION SERVICES (HAULERS) USED:

[illegible]


- RESPONSE NO. 7 -

HANNAH MARINE CORPORATION

SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

GASOLINE (PETROL)

USCG SUB-CHAPTER (D)

JULY 3, 1984

GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo containing Gasoline bottoms. It should be understood that cleaning practices can vary from this procedure due to type and condition of barge, reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide for satisfactory results. Variables may exist on some cleanings such as single skinned hulls, resulting in internal cargo tank framing, type and location of steam coils, amount and condition of bottoms, all can be contributing factors as far as methods and costs.

1.0 Information Requirements

a. The following information is essential for change of cargo cleanings.

b. Type of barge, single or double skinned.

c. Number of cargo compartments, coated or uncoated.

d. Existing bottoms, next product to load.

e. If possible, when was the barge last cleaned, is the barge frequently cleaned between loadings.

1.1 Inspection Prior to Cleaning

a. Inspect all compartments with the appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.

b. Open all cargo hatches, butterworth and ullage openings, inspect from topside amount and condition of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.

c. During this inspection, make note of rust build-up in cargo compartments. This could be the determining factor if a backflush of header and pipelines will be necessary.

1.2 Cargo Tank Washing

a. Ballast barge fore or aft, depending on sump location.

b. Install butterworth spinners approximately six feet down from tank top, connect vacuum line to the vessel's discharge header, start vessel's pump engine, engage pump as booster to dock vacuum pump. Spin each compartment for about seven minutes with water temperature between 90° to 110°.

c. Upon completing the spinning of the compartment, install forced air blowers in the cargo tank manway hatch and butterworths, blow compartment until gas free, safe for entry, see Section 1.4, Paragraph (a).

d. Upon assurance of safe entry, enter compartment, if heavy concentrations of rust or scale are in evidence, hand wash walls, pipelines and floors of rust or scale to sump area and remove by bucketing from compartment. Hand wash walls and floors with high pressure hose to remove balance of rust and/or rust residue left from the first rust removal operation. It is noteworthy to add that infrequent washing between cargoes of gasolines will, in most cases, leave heavy concentrations of rust and rust residue from five to ten inches on areas of compartment floors, depending on condition of shore tanks, etc.

1.3 Backflush of Pipeline System

a. If there is a heavy concentration of rust or scale on the compartment floors, it is safe to assume even after spinning through the header system, that there is an excessive amount of rust left in the pipelines and header. It is essential that this rust and/or residue be removed to prevent the possibility of contamination to the next cargo.

b. Backflushing consists of installing a 1-1/2" line

1.3 Backflush of Pipeline System (Cont'd)

from the dock wash pump to the vessel's discharge header, place last cargo valve from the header in the open position and flush system at 90 to 100 pounds water pressure for at least ten minutes, depending on the amount of residue that might exist in the lines. To be assured that all rust and/or residue is removed, inspect the suction bells in each compartment. If the water coming from the bells is free of rust or residue, it can be assumed that the pipelines are free of contamination that might be harmful to the next product.

c. Upon being assured that the pipelines are free of rust, re-rinse compartment floors, remove any remaining rust from sumps and surrounding areas and force air blow compartment walls and floors dry.

d. When the barge is blown dry, install header blinds (4) bolts each blind, reinstall pump cleanout blind with gasket and bolts. Cleanout blind must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc. Fuel up pump engine if required.

1.4 Characteristics and Safety

a. As noted on the attached chemical data sheet, gasoline does present an inhalation health hazard. Maintain blowers and force air blow compartments, checking level of oxygen and odor threshold (ppm) ppm maximum acceptance level prior to and during entry. Due to the safety characteristics, no personnel shall be allowed to enter any compartment if the lower explosion level exceeds (5) percent and the oxygen level is below (20) percent.

b. Gasoline (Petrol) C_5H_{12} to C_9H_{20} is a mixture of volatile hydrocarbon containing straight chain and branched chain paraffine, naphthenes and aromatic hydrocarbon such as

1.4 Characteristics and Safety (Cont'd)

n-Heptane, Iso-octane, Methyl Cyclohexane, Benzene and Toluene, Alcohol and other combustibles are also present in some special gasolines.

GASOLINE MOTOR

Synonyms—Petrol

United Nations Number.....1023

CHRIS CodeGAT

Formula— C_5H_{12} to C_9H_{20}

Boiling Point.....60 to 140 to
100 °C 300 °F
Freezing Point.....Unavailable °C °F

Appearance—Odor—Colorless to straw-white liquid; sweet,
pleasant odor

Specific Gravity—0.72 - 0.76

Vapor Pressure 20°C (68°F) (mmHg) 190

Reid Vapor Pressure (psia).....7.4

Chemical Family—Hydrocarbons

Vapor Pressure 46°C (115°F) (psia).....12.5

Vapor Density (Air = 1.0).....3.4

Applicable Bulk Regulations 46 CFR Subchapter 0

Solubility in Water.....Negligible

FIRE & EXPLOSION HAZARD DATA

Grade—C: Flammable liquid

Electrical Group—0

General—Dangerous fire and explosion hazard in presence of heat or flame.

Flash Point (°F).....-40

Flammable Limits.....1.4 - 7.6%

Autoignition Temp. (°F).....495

Extinguishing Agents.....CO₂, dry chemical, foam, water fog

Special Fire Procedures.....Tanks exposed to fire should be kept cool with a water spray.

HEALTH HAZARD DATA

Health Hazard Ratings

1,1,2

Odor Threshold (ppm)

0.25

TLV (ppm)

500-1000

General—Liquid irritating to skin and eyes on contact. Vapor inhalation leads to intoxication.

Symptoms—Inhalation: Marked vertigo, inability to walk a straight line, hilarity, incoordination intense burning in throat and lungs, possibly bronchopneumonia, nausea, vomiting.

*Short Exposure Tolerance—0.5 to 1.6% vapor concentration was fatal to a man after 5 minutes exposure; 500 to 30,000 ppm was fatal to a youth.

Exposure Procedures—Inhalation: Immediately remove victim from contaminated atmosphere. If breathing is interrupted, artificial respiration should be applied immediately. A physician should be called.

REACTIVITY DATA

Stability—Chemically stable.

Compatibility—Material: Almost any usual material of construction is suitable. Natural rubber is softened and will deteriorate rapidly.

Cargo: Group 33 of compatibility chart.

SPILL OR LEAK PROCEDURE

Wear polyethylene gloves, face shield, protective clothing. Have all-purpose canister mask available. Secure ignition sources. Small spills may be flushed away with water.

If a spill occurs, call the National Response Center 800-424-8802.

HANNAH MARINE CORPORATION

SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

THREE AND SIX COMPARTMENTS

195' X 35' X 12'

TALLOW AND BEAN OILS

U.S.C.G. SUB-CHAPTER (D)

JUNE 12, 1984

GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo with Tallow and/or Bean Oil bottoms. It should be understood that in some cases, cleaning practices may vary from this procedure due to type and condition of barge and reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide to achieve satisfactory results. Variables may exist on some cleanings such as single skinned hulls resulting in internal cargo tank framing, type and location of steam coils and ambient temperatures, all can contribute to cleaning methods and costs.

1.0 Information Requirements

(a) The following information is essential in achieving favorable results on change of cargo cleanings.

(b) Type of barge, single or double skinned.

(c) Number of cargo compartments, lined or unlined.

(d) Type of existing bottoms and product to be reloaded.

(e) If possible, when was the last cleaning, is the barge frequently cleaned between loadings.

1.1 Inspection Prior to Cleaning

(a) Inspect all void and cargo compartments with the appropriate safety meter for a safe-to-enter status, included in this inspection, check water level in all void compartments.

(b) Open up all cargo hatches, butterworths, and ullage openings, inspect from topside the amount and conditions of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.

1.1 Inspection Prior to Cleaning (Cont'd)

(c) During this preliminary inspection, make note of compartment residue, setup bottoms on walls, floors and pipelines, also, if steaming or backflushing is necessary.

1.2 Cargo Tank Washing

(a) Ballast barge fore or aft, depending on location of sumps.

(b) If the ambient temperature is such to cause set-up bottoms, steam compartments and headers until bottoms are in a liquified condition. Strip pure product left in barge to suitable storage drums for reclamation. Install butterworth spinners approximately three feet down from tank top, connect vacuum line to vessel's discharge header, start vessel's pump engine, engage pump as booster to dock vacuum pump and as a means to clean vessel's cargo pump of product. Spin each compartment for about 15 minutes with water temperature between 150° to 200°.

(c) After spinning the compartment, install forced air blowers in the compartment's manway and butterworth hatches, blow until gas free, safe for men to enter, see Paragraph 1.4 Characteristics and Safety.

(d) When the tank is proven safe for men to enter, hand wash all remaining product or product residue from walls, floors and pipelines by means of a high pressure hose and water temperature at about 130°. Remove cleanout blinds, open cargo valves, and drain remaining water diluted product from pipelines into cargo tanks, if an accumulation of product is in evidence upon dropping the headers, backflushing the pipeline system shall be required to prevent contamination of the next product to be loaded in the barge.

1.3 Backflushing Pipeline System

(a) If there is an accumulation of product in evidence in the pipeline after dropping the headers, it is safe to assume even after spinning through the header system that there is product left in the pipeline system. It is essential that this be removed to prevent any possibility of contamination to the next product to load that might be unrelated to Tallow and/or Bean Oils.

(b) Backflushing consists of installing a 1-1/2" line from the dock wash pump to the vessel's discharge header flange, place last cargo valve and/or loadline valve from the header in the open position and flush system at 110 pounds of water pressure, with water at 130° for about 15 minutes, depending upon the amount of product or product residue that might still exist in the lines. To be assured that all product is removed, inspect the suction bells in each compartment, if the water is clear and free of residue coming from the suction bells, it can be assumed that the pipelines are free of any contaminations that might be harmful to the next product. It should be noted that due to product characteristics and washing through the headers will in some cases eliminate the need to backflush every barge that will clean for change of cargo.

(c) Upon being assured that the pipelines are free of product or product residue, remove product and/or residue from sump areas, re-rinse and squeegee compartment floors, force air blow compartment walls and floors dry.

(d) Upon completion of washing, install blind flanges with gaskets, four bolts each, blind on headers, also install blind flange on cleanout with gaskets and bolts. Cleanout flange must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

1.4 Characteristics and Safety

(a) As noted in the attached chemical data sheet, tallow and bean oils do not present an inhalation health hazard, but because of unknown prior cargoes, as a margin of safety, install blowers and force air blow compartments for at least one hour prior to entry.

1.5 Waste Water Generated

(a) Method of cleaning will dictate the amount of waste water generated to clean for change of cargo.

(b) Cleaning from tallow and/or bean oils to an unrelated next product will average about 13,000 gallons of waste water requiring disposal.

1.6 Cost of Cleaning

(a) The cleaning cost to clean from Tallow and Bean Oils will average about \$2,375.56 per barge.

Synonyms—Chinese bean oil, soybean oil, soy oil

United Nations Number..... 1204

CHRIS Code 052

Formula—Mixture

Boiling Point..... Very high °C 37 °F

Appearance—Odor—Pale yellow liquid; weak odor

Freezing Point -20 °C -4 °F

Specific Gravity—0.92 - 0.93

Vapor Pressure 20°C (68°F) (mmHg) 2.04

Reid Vapor Pressure (psia)..... 0.10

Chemical Family—Esters

Vapor Pressure 46°C (115°F) (psia). 0.18

Vapor Density (Air = 1.0)..... Not pertinent

Applicable Bulk Regulations 46 CFR Subchapter D

Solubility in Water..... Slight

FIRE & EXPLOSION HAZARD DATA

Grade—E: Combustible liquid
Electrical Group—D

General—Slight fire hazard when exposed to heat or flame

Flash Point (°F).....	540
Flammable Limits.....	Unavailable
Autoignition Temp. (°F).....	833
Extinguishing Agents.....	Dry chemical, foam or carbon dioxide
Special Fire Procedures.....	Water may be ineffective on fire. Cool exposed containers with water.

HEALTH HAZARD DATA

Health Hazard Ratings
Unavailable

Odor Threshold (ppm)
Not pertinent

TLV (ppm)
Not pertinent

General—Not harmful.

Symptoms—None

*Short Exposure Tolerance—Does not penetrate skin in harmful amounts.

Exposure Procedures—None

REACTIVITY DATA

Stability—Stable. Soluble in alcohol, ether, chloroform and carbon disulfide.

Compatibility—Materials: Will soften some paints and rubber. Has no action on steel.

Cargo: Group 20 of compatibility chart.

SPILL OR LEAK PROCEDURE

Wear rubber gloves, face shield and laboratory coat. Secure all ignition sources.

If a spill occurs, call the National Response Center 800-424-RRR7

Synonyms—Edible tallow, inedible tallow, tallow oil

United Nations Number.....Unk

CHRIS CodeTL0

Formula—Fats containing C_{16} to C_{18}

Appearance—Odor—Dark yellow liquid with a waxy odor

Specific Gravity—0.85 - 0.89 @ 70°C

Chemical Family—Esters

Applicable Bulk Regulations 46 CFR Subchapter 0

Boiling Point.....Very high °C °F

Freezing Point2 to 7 °C 35 to 45 °F

Vapor Pressure 20°C (68°F) (mmHg) 2.0

Reid Vapor Pressure (psia)..... 0.1

Vapor Pressure 46°C (115°F) (psia). 0.2

Vapor Density (Air = 1.0)..... Not pertinent

Solubility in Water..... Not pertinent

FIRE & EXPLOSION HAZARD DATA

Grade—D: Combustible liquid
Electrical Group—D

General—Slight fire hazard when exposed to heat or flame

Flash Point (°F)..... 509

Flammable Limits..... Unavailable

Autoignition Temp. (°F)..... Unavailable

Extinguishing Agents..... Foam, water, CO_2 , or dry chemical

Special Fire Procedures..... Water may be ineffective. Cool exposed containers with water.

HEALTH HAZARD DATA

Health Hazard Ratings

Not pertinent

General—Non-toxic

Odor Threshold (ppm)

Unavailable

TLV (ppm)

Not pertinent

Symptoms—Non-toxic

*Short Exposure Tolerance—Hot liquid can burn eyes and skin

Exposure Procedures—Treat burns caused by hot liquid

REACTIVITY DATA

Stability—Stable

Compatibility—Cargo: Group 34 of compatibility chart.

SPILL OR LEAK PROCEDURE

Wear rubber gloves, face shield and laboratory coat.

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If a spill occurs, call the National Response Center 800-424-8802.

HANNAH MARINE CORPORATION

SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

ON

THREE AND SIX COMPARTMENT BARGES

195' X 35' X 12'

U.S.C.G. SUBCHAPTER (1)

MOLASSES

JUNE 11, 1984

GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in the cleaning of liquid tank barges for change of cargoes with molasses bottoms. It should be understood that cleaning practices can vary from this procedure depending on condition of bottoms and reload requirements that may be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide to aid in assurance of satisfactory results. Variables may exist on some cleanings such as single skinned hulls resulting in internal cargo tank framing, type and location of steam coils, and ambient temperatures, all can contribute to cleaning methods and costs.

1.0 Information Requirements

(a) The following information is essential in achieving favorable results on change of cargo cleanings.

(b) Type of barge, single or double skinned.

(c) Number of cargo compartments, lined or unlined.

(d) Type of existing bottoms, product to be re-loaded.

(e) If possible, when was the last cleaning of the barge, is the barge frequently cleaned between loadings.

1.1 Inspection Prior to Cleaning

(a) Inspect all compartments with an appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.

(b) Open up all cargo hatches, butterworths and ullage openings, inspect from topside the amount and condition of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.

(c) During this preliminary inspection, make note of compartment residue, setup or burnt molasses on walls and

1.1 Inspection Prior to Cleaning (Cont'd)

pipelines, also, if steaming or backflushing is necessary.

1.2 Cargo Tank Washing

(a) Ballast barge fore or aft, depending on location of sumps.

(b) If the ambient temperature is such to cause setup bottoms, steam compartments and headers until molasses is in a liquified condition. Install butterworth spinners approximately four feet down from tank top, connect vacuum line to vessel's discharge header, start vessel's pump engine, engage pump as booster to dock vacuum pump and as a means to clean vessel pump of product. Spin each compartment for about 12 minutes. If the ambient temperature is above 30°, wash water temperature should be 90°. If below 30°, wash water should be 120°.

(c) After spinning the compartment, install forced air blowers in the compartment's manway and butterworth hatches, blow until gas free, safe for men to enter, see Paragraph 1.3 Characteristics and Safety.

(d) When the tank is safe to enter, hand wash all remaining molasses from walls and floors by means of a high pressure hose with water temperature at 110°. Remove clean-out blinds, open cargo valves and drain remaining water diluted molasses from pipelines into cargo tanks.

(e) Due to the characteristics and compatibility of molasses, it is common practice to load this product on top of other bottoms such as tallows and bean oils, and also due to the necessity to steam prior to unloading, can both be cause for problems ~~to be~~ encountered in the cleaning operation. For example, if during the course of product steaming the temperature exceeds 120° for any length of time, can result in molasses or molasses residue to be baked and/or

1.2 Cargo Tank Washing (Cont'd)

burnt on walls, floors, and pipelines, requiring extensive hand scraping and wire brushing for removal. If the molasses was loaded on top of an unrelated product, the removal of both can change the method of cleaning the barge.

(f) Upon being assured that all pipelines, walls, and floors are free of molasses and molasses residue, hand wash walls and pipelines in compartments, squeegee floors and force air blow compartment walls and floors dry.

(g) Upon completion of washing, install blind flanges with gaskets, four bolts on each blind, also install blind flange on cleanout with gaskets and bolts. Cleanout flange must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

1.3 Characteristics and Safety

(a) Fermentation occurs when molasses is diluted with salt or fresh water and is accelerated by heat. During fermentation, CO₂ (with possible traces of ethanol and higher alcohol vapor) is given off, which will produce inhalation hazard in compartments containing molasses residue. It is noteworthy to add that molasses or molasses residue will absorb all oxygen in the cargo or void compartment and entry prior to checking oxygen level with an oxygen meter can result in death. As a margin of safety, blow all compartments two hours and check oxygen level prior to entry. A safe oxygen level shall not be less than 20 percent.

1.4 Waste Water Generated

(a) Condition of compartments and method of cleaning will dictate the amount of waste water generated to clean

1.4 Waste Water Generated (Cont'd)

for change of cargo.

(b) Cleaning from molasses to an related next product will average about 9,375 gallons of waste water requiring disposal.

1.5 Cost of Cleaning Molasses

(a) The cost of cleaning from molasses to an unrelated next product will average about 2,830.80 per barge.

Synonyms—Treacle

United Nations Number..... Unassigned

CHRIS Code..... Unassigned

Formula—A mixture of sucrose and sugar

Boiling Point..... Very high °C °F

Appearance—Odor—Dark brown syrupy liquid

Freezing Point..... Varies °C °F

Specific Gravity—1.45

Vapor Pressure 20°C (68°F) (mmHg) Low

Reid Vapor Pressure (psia)..... Low

Chemical Family—Alcohols, Glycols and Glycol Ethers

Vapor Pressure 46°C (115°F) (psia)..... Low

Vapor Density (Air = 1.0)..... H₂O vapor only

Applicable Bulk Regulations 46 CFR Subchapter 1

Solubility in Water..... Soluble

FIRE & EXPLOSION HAZARD DATA

Grade—Non-flammable

Electrical Group—NA

General—Non-flammable and non-combustible

Flash Point (°F)..... Non-flammable

Flammable Limits..... Non-flammable

Autoignition Temp. (°F)..... Non-flammable

Extinguishing Agents..... Non-flammable

Special Fire Procedures..... Non-flammable

HEALTH HAZARD DATA

Health Hazard Ratings

Unavailable

Odor Threshold (ppm)

Unavailable

TLV (ppm)

Unavailable

General—Non-toxic. Molasses fermentation occurs when molasses is diluted with salt or fresh water and is accelerated by heat. During fermentation CO₂ (with possible traces of ethanol and higher alcohol vapor) is given off, which will produce inhalation hazard in compartment containing molasses residues.

Symptoms—Non-toxic

Short Exposure Tolerance—Unavailable

:
:

Exposure Procedures—Vapor—remove victim to fresh air. Skin or eye contact—remove contaminated clothing and flush affected areas gently with water.

REACTIVITY DATA

Stability—Stable. Reacts with conc. nitric acid and conc. sulphuric acid. Ferments when diluted with salt or fresh water.

Compatibility—Material: Mild steel and stainless steel are suitable.

Cargo: Group 43 of compatibility chart.

SPILL OR LEAK PROCEDURE

Wash area with water after removing bulk of spill by general means.

If a spill occurs, call the National Response Center 800-424-8802.

Remarks:

HANNAH MARINE CORPORATION

SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

STYRENE MONOMER INHIBITED

USCG SUB-CHAPTER (O)

JUNE 26, 1984

GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo containing Styrene bottoms. It should be understood that cleaning practices can vary from this procedure due to type and condition of barge, reloading requirements that might be dictated by the customer. The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide for satisfactory results. Variables may exist on some cleanings such as single skinned hulls, resulting in internal cargo tank framing, type and location of steam coils, amount and condition of bottoms all can be contributing factors in methods and costs.

1.0 Information Requirements

- (a) The following information is essential on change of cargo cleanings.
- (b) Type of barge, single or double skinned.
- (c) Number of cargo compartments, coated or uncoated.
- (d) Existing bottoms, next product to load.
- (e) If possible, when was the last cleaning, is the barge frequently cleaned between loadings.

1.1 Inspection Prior to Cleaning

- (a) Inspect all compartments with the appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.
- (b) Open all cargo hatches, butterworth and ullage openings, inspect from topside amount and condition of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.
- (c) During this inspection, make note of any product polymerization, see Section 1.3 Paragraph (a).

1.2. Cargo Tank Cleaning (Strip and Blow)

(a) The two most common methods of change of cargo cleanings are either water wash or a strip and blow. This procedure reflects the strip and blow method.

(b) Ballast barge fore or aft, depending on location of sumps.

(c) Due to the product's flash point and prior to cleaning, install ground cable from barge to dock to eliminate any possibility of a static explosion.

(d) Strip vessel's pipelines of product through the stripping line using either portable or dock vacuum pump. From topside, strip pure product from cargo compartments by means of a 1-1/2" aluminum pipe equipped with brass fittings attached to vacuum hose, store pure product in suitable storage container for reclamation.

(e) Install forced air blowers in the compartment's butterworth and manway hatches, blow until gas free, safe for men to enter, see Section 1.3.

(f) Upon assurance that the compartment is in a safe to enter condition, open cargo and loadline valves, pump cleanout blind, drop header and strip any remaining product from lines, sumps and floors, including rust or scale of any consequence.

(g) When barge is stripped product free, continue to force air blow until compartments are dry and odor free.

(h) When barge is blown dry, install header blind flanges (4) bolts each blind flange, reinstall blind flange with gasket and bolts on pump cleanout. Cleanout blind must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine, if required.

1.3 Characteristics and Safety

(a) Styrene Monomer $C_6H_5CHCH_2$ readily undergoes polymerization when heated or exposed to light or a peroxide catalyst, becoming increasingly viscous until a clear solid is produced. The polymerization releases heat and may become explosive. Inhibitors such as Hydro-Quinone or Para-Tert-Butylcatechol, must be added to prevent polymerization during storage or shipping.

(b) As noted on the attached chemical data sheet, Styrene does present an inhalation health hazard. Maintain blowers and force air blow compartments, checking level of oxygen and odor threshold (ppm), 100 ppm maximum acceptance level prior to and during entry.

1.4 Waste Water Generated

(a) Due to the fact a normal strip and blow does not require washing, no waste water is generated.

1.5 Cost of Cleaning

(a) The cost of cleaning from Styrene Monomer to an unrelated next product will average about \$900.00 per barge.

Synonyms: Cumene, cumyl, propylbenzene, isopropylbenzene, methylpropylbenzene

United Nations Number..... 177
CHRIS Code..... 177

Formula: C_9H_{10} CH_2CH_3

Boiling Point..... $141^\circ C$ $286^\circ F$
Freezing Point..... $-30^\circ C$ $-22^\circ F$

Appearance/Odor: Colorless liquid, sweet odor when pure;
sharp & disagreeable odor when impure

Specific Gravity: 0.88

Vapor Pressure $20^\circ C$ ($68^\circ F$) (mmHg) 88

Reid Vapor Pressure (psia)..... 0.77

Vapor Pressure $46^\circ C$ ($115^\circ F$) (psia)..... 0.1

Vapor Density (Air = 1.0)..... 2.1

Chemical Family: Monomer

Solubility in Water..... Not miscible

Applicable Bulk Regulations 46 CFR Subchapter 0

FIRE & EXPLOSION HAZARD DATA

Grade-D: Combustible liquid
Electrical Group-D

General-Ignited by heat and open flame. Fire or contamination may cause violent rupture of tank.

Flash Point ($^\circ F$)..... 100

Flammable Limits..... 1.1 - 6.1%

Autoignition Temp. ($^\circ F$)..... 916

Extinguishing Agents..... CO_2 , dry chemical, water fog, foam

Special Fire Procedures..... Provide body and respiratory protection for firefighting personnel. Tanks exposed to fire should be kept cool with a water spray.

HEALTH HAZARD DATA

Health Hazard Ratings
2,22

Odor Threshold (ppm)
0.16

TLV (ppm)
100

General-Vapor very irritating to eyes, moderately irritating to respiratory tract with moderate systemic effect. Liquid irritating to skin.

Symptoms-Weakness, dizziness, nausea, and sleepiness.

Short Exposure Tolerance-10,000 ppm may be fatal in 30 to 60 minutes.

Exposure Procedures-Vapors-remove victim to fresh air; if breathing stops, apply artificial respiration. Skin or eye contact-remove contaminated clothing and gently flush affected areas with water for 15 minutes. Soap, if available, should be used on affected skin areas. Get medical attention.

REACTIVITY DATA

Stability-Will readily form peroxides which catalyze polymerization unless inhibited. Heat, light and strong acids also catalyze polymerization reaction.

Compatibility-Material: Most materials of construction are suitable. Do not use copper or its alloys. Styrene can be polymerized at explosive rates by certain contaminants.

Causes: Group 30 of compatibility chart.

SPILL OR LEAK PROCEDURE

Wear rubber gloves, face shield, protective clothing. Have all-purpose canister mask available. Avoid contact with liquid. Secure ignition sources.

If a spill occurs, call the National Response Center 800-474-2802.

Remarks: "Even the inhibited product, when heated above $125^\circ F$, can polymerize with the generation of so much heat that ignition is possible.

HANNAH MARINE CORPORATION

SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE
FOR
CHANGE OF CARGO
ON
THREE AND SIX COMPARTMENT BARGES
195' X 35' X 12'

U.S.C.G. SUB-CHAPTER (D)

ETHYLENE GLYCOL

JUNE 14, 1984

GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo with Glycol bottoms. It should be understood that in some cases, cleaning practices may vary from this procedure due to type and condition of barge and reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide to achieve satisfactory results. Variables may exist on some cleanings such as single skinned hulls, resulting in internal cargo tank framing, type and location of steam coils, all can contribute to cleaning methods and costs.

1.0 Information Requirements

(a) The following information is essential in achieving favorable results on change of cargo cleanings.

(b) Type of barge, single or double skinned.

(c) Number of cargo compartments, lined or unlined.

(d) Type of existing bottoms, product to be reloaded.

(e) If possible, when was the last cleaning of the barge, is the barge frequently cleaned between loadings.

1.1 Inspection Prior to Cleaning

(a) Inspect all compartments with an appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.

(b) Open up all cargo hatches, butterworths and ullage openings, inspect from topside the amount and condition of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.

(c) During this inspection, make note of any build-up of product residue.

1.2 Cargo Tank Washing

(a) Ballast barge fore or aft, depending on location of sumps.

(b) Install forced air blowers in the compartment's manway and butterworth hatches. Blow until gas free, safe for men to enter, see Paragraph 1.3 Characteristics and Safety.

(c) Upon assurance that the compartment is in a safe to enter condition, open cargo valves and pump cleanout blind flange, drop headers, strip pure product left in barge to suitable storage container for reclamation. Hand wash walls, piping, floors and framing, if single skinned, of all product, with high pressure hose, 110 pounds of water pressure and cold water, strip waste water from compartment, remove puddles of water, if required, from floor and force air blow compartment dry.

(d) Upon completing the washing operation, install header blind flanges with gaskets, 4 bolts each blind, install blind flange on cleanout with gaskets and bolts. Cleanout blind must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

1.3 Characteristics and Safety

(a) As noted on the attached chemical data sheets, Glycols do not present an inhalation health hazard, but because of unknown prior cargoes, as a margin of safety, install blowers and force air blow compartments and check level of oxygen and odor threshold (ppm) prior to entry.

1.4 Waste Water Generated

(a) Condition of compartments and method of cleaning will dictate the amount of waste water generated to

1.4 Waste Water Generated (Cont'd)

clean for change of cargo.

(b) Cleaning from Glycol to an unrelated next product will average about 3,250 gallons of waste water requiring disposal.

1.5 Cost of Cleaning

(a) The cost of cleaning from Glycol to an unrelated next product will average about \$733.10 per barge.

Synonyms - 2 Butoxyethanol, butyl cellosolve

United Nations Number..... 1202
 CHIPIS Code 160

Formula - $\text{CH}_3\text{OCH}_2\text{OC}_4\text{H}_9$

Boiling Point..... 171°C 340°F
 Freezing Point..... -40°C -40°F

Appearance - Odor - Colorless liquid, mild odor

Vapor Pressure 20°C (68°F) (mmHg) 0.71

Specific Gravity - 0.80

Real Vapor Pressure (psia)..... 2.2

Chemical Family - Ether

Vapor Pressure 46°C (115°F) (psia) 2.2

Applicable Bulk Regulations 46 CFR Subchapter D

Vapor Density (Air = 1.0)..... 4.07

Solubility in Water..... Complete

FIRE & EXPLOSION HAZARD DATA

Grade - E: Combustible liquid
 Electrical Group - C

General - Moderate hazard, when exposed to heat or flame.

Flash Point ($^\circ\text{F}$)..... 141 (cc)
 Flammable Limits..... 1.1 - 10.6%
 Autoignition Temp. ($^\circ\text{F}$)..... 472
 Extinguishing Agents..... Water, alcohol foam, carbon dioxide or dry chemical
 Special Fire Procedures..... Cool fire exposed tanks with water.

HEALTH HAZARD DATA

Health Hazard Ratings	Odor Threshold (ppm)	TLV (ppm)
1, 1, 2	Unavailable	50

General - Eye and respiratory tract irritation, nausea, blood, kidney, and to a lesser degree, liver damage can be produced in animals from a single or repeated exposures at concentrations less than saturation.

Symptoms - Eye, nose, and throat irritation.

Short Exposure Tolerance - 200 ppm for approximately one hour.

Exposure Procedures - Prevent repeated skin contact by protective clothing.

REACTIVITY DATA

Stability - In general, an inert solvent.

Compatibility - Material: Compatible with usual shipping containers.

Cargo: Group 40 of compatibility chart.

SPILL OR LEAK PROCEDURE

Wear rubber gloves, face shield, protective clothing. Have all-purpose canister mask available. Avoid personnel contact with liquid and vapor. Secure all sources of ignition.

If a spill occurs, call the National Response Center 800-474-8802.

Remarks:

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME UNKNOWN		EMERGENCY TELEPHONE NO.
ADDRESS (Number, Street, City, State, and ZIP Code)		
CHEMICAL NAME AND SYNONYMS 2-Butoxyethanol, butylcellosolve		TRADE NAME AND SYNONYMS Anti-Freeze
CHEMICAL FAMILY Ether	FORMULA CH₃OHCH₂OC₄H₉	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Unit)	ALLOYS AND METALLIC COATINGS	%	TLV (Unit)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Unit)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	340°	SPECIFIC GRAVITY (H ₂ O=1)	0.90
VAPOR PRESSURE (mm Hg.)	0.76	PERCENT VOLATILE BY VOLUME (%)	Unavail.
VAPOR DENSITY (AIR=1)	4.07	EVAPORATION RATE (_____ = 1)	Unavail.
SOLUBILITY IN WATER	Comp.		
APPEARANCE AND ODOR	Colorless liquid, mild odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	141(cc)	FLAMMABLE LIMITS	1.1 - 10.6%	LW	UM
EXTINGUISHING MEDIA	Water, alcohol foam, carbon dioxide or dry chemical				
SPECIAL FIRE FIGHTING PROCEDURES	Cool fire exposed tanks with water				
UNUSUAL FIRE AND EXPLOSION HAZARDS	Unavail. 161				

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	50 (ppm)
EFFECTS OF OVEREXPOSURE	Eye, nose, and throat irritation.
EMERGENCY AND FIRST AID PROCEDURES	Unavail.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
Inert	STABLE		Unavail.
INCOMPATIBILITY (Materials to avoid)			
Compatible with usual shipping containers.			
HAZARDOUS DECOMPOSITION PRODUCTS			
Unavailable			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR		Unavail.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
Wear rubber gloves, face shield, protective clothing. Have all-purpose canister mask available. Avoid personnel contact with liquid and vapor. Secure all sources of ignition. If spill occurs, call National Response Center 800-424-8802.	
WASTE DISPOSAL METHOD	
Unavailable	

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)		
Unavail.		
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES		EYE PROTECTION
OTHER PROTECTIVE EQUIPMENT		

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Unavailable
OTHER PRECAUTIONS

HANNAH MARINE CORPORATION

SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

LIQUIDOW

CALCIUM CHLORIDE

U.S.C.G. SUB-CHAPTER (NOT LISTED)

JUNE 20, 1984

GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo containing calcium chloride bottoms. It should be understood that cleaning practices can vary from this procedure due to type and condition of barge, reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide for satisfactory results. Variables may exist on some cleanings such as single skinned hulls, resulting in internal cargo tank framing, type and location of steam coils can contribute to methods and and costs.

1.0 Information Requirements

(a) The following information is essential on change of cargo cleanings.

(b) Type of barge, single or double skinned.

(c) Number of cargo compartments, coated or uncoated.

(d) Existing bottoms, next product to load.

(e) If possible, when was the last cleaning, is the barge frequently cleaned between loadings.

1.1 Inspection Prior to Cleaning

(a) Inspect all compartments with the appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.

(b) Open all cargo hatches, butterworths and ullage openings, inspect from topside the amount and condition of product left in the barge, amount and condition shall be the determining factor as to method of cleaning, see Section 1.2 Paragraph (a), also pipeline, suction bell and/or sump location for ballasting purposes.

1.1 Inspection Prior to Cleaning (Cont'd)

(c) During this inspection, make note of product and/or product residue, salt solids, of any consequence.

1.2 Cargo Tank Washing

(a) Due to the characteristics of Liquidow (calcium chloride), salt solids coming out of suspension and settling on compartment floors in any heavy concentrations and/or if Liquidow is loaded over gas and fuel oils, can change the method of cleaning from simple hand wash to a more elaborate hot water spin including backflush and bucketing out of salt solids, Section 1.2 reflects both methods of cleaning.

(b) Ballast barge fore or aft, depending on sump location.

(c) Install forced air blowers in compartment manway hatches and butterworth openings, blow until gas free, safe for men to enter, see Section 1.4, Paragraph (a).

(d) Upon being assured that the compartment is in a safe-to-enter condition, open cargo valves, connect dock vacuum pump to vessel's discharge header, start pump engine, engage pump as booster to vacuum pump and as a means to clean product from cargo pump. Hand wash walls, floors, pipelines and if equipped, cargo tank framing of product and product residues by means of a high pressure hose with water temperature at 100°. Remove clean out blinds and drain water diluted Liquidow from pipelines into cargo tanks.

(e) If the concentration of salt solids is heavy on the floors and cannot be removed by hand washing, it will require the bucketing out of the subject solids from the floors.

(f) If, during the inspection prior to cleaning, it is discovered that the Liquidow has been loaded on top of

1.2 Cargo Tank Washing

an unrelated product such as gasoline or fuel oils, etc., the method of cleaning will change from hand washing to a hot water spin and backflush.

(g) Install butterworth spinners approximately 36" down from tank top, connect vacuum line to vessel's discharge header, start vessel's pump engine, engage pump, spin each compartment for 10 minutes with water temperature between 120° to 130°.

(h) After spinning the compartment, install forced air blowers per Section 1.2, Paragraph (c).

(i) When the tank is proven safe to enter, hand wash all remaining product from walls, floors and pipelines with water temperature at 100°. Remove cleanout blinds, open all cargo valves and drain all remaining water diluted product from pipelines into cargo tanks. If there is an accumulation of Liquidow salt solids, rust or other unrelated product in evidence upon dropping the headers, backflushing the pipeline system will be required to prevent the possibility of contamination to the next product to be loaded.

1.3 Backflushing Pipeline System

(a) It is, in most cases, safe to assume even after spinning through the header system that there is product left in the pipeline system, it is essential that this be removed by backflushing.

(b) Backflushing consists of installing a 1-1/2" line from the dock wash pump to the vessel's discharge header, place cargo valves in the open position and flush system at 90 to 100 pounds of water pressure. To be assured that all product is removed, inspect the suction bells in each compartment, if the water is clear and free of residue, it can be assumed that the pipelines are free of any contamination that might be harmful to the next product.

1.3 Backflushing Pipeline System (Cont'd)

(c) Upon being assured that the pipelines are free of product or product residue, remove rust or product from the sump areas, re-rinse compartment floors.

(d) Upon completion of washing, install blind flanges with gaskets, four bolts each blind flange, on headers. Also install blind flange with gasket and bolts. Cleanout flange must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

1.4 Characteristics and Safety

(a) No chemical data sheet is available as of date of this procedure. Calcium Chloride does not present an inhalation health hazard, but because of unknown prior cargoes, as a margin of safety, install blowers and force air blow compartments and check level of oxygen and odor threshold (ppm) prior to entry.

1.5 Waste Water Generated

(a) Condition of compartments and method of cleaning will dictate the amount of waste water generated to clean for change of cargo.

(b) Cleaning from Liquidow, Calcium Chloride to an unrelated next product will average about 9,750 gallons of waste water requiring disposal.

1.6 Cost of Cleaning

(a) The cost of cleaning from Liquidow to an unrelated next product will average about \$2,369.00 per barge.

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HANNAH MARINE CORPORATION

SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

CAUSTIC SODA SOLUTION

JUNE 7, 1984

GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo with Caustic Soda bottoms and/or related by-products. It should be understood that in some cases, cleaning practices may vary from this procedure due to type and condition of barge and reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide to achieve satisfactory results. Variables may exist on some cleanings such as single or double skinned hulls, internal framing, type and location of steam coils and ambient temperatures, and all contribute to cleaning methods.

1.0 Information Requirements

(a) The need for the following information upon customer contact is essential to achieve favorable results on change of cargo cleanings.

(b) Type of barge, single or double skinned.

(c) Number of cargo compartments, coated or uncoated.

(d) Type of existing bottoms and product to be reloaded.

(e) If possible, when was the last cleaning of the barge, is barge frequently cleaned between loadings.

1.1. Inspection Prior to Cleaning

(a) Inspect all void compartments with an appropriate safety meter for a safe-to-enter status, included in this inspection, check for level of water in all void compartments.

(b) Open up all cargo hatches, butterworths and ullage openings, inspect from topside the amount and condi-

1.1 Inspection Prior to Cleaning (Cont'd)

tion of bottoms left in the barge, location of piping, suction bells and/or sumps for purpose of ballasting.

(c) During this preliminary inspection, make note of compartment residue, setup or frozen caustic and/or any related circumstances that might prove to be a problem in cleaning. Also, if steaming or backflushing may be necessary.

1.2 Cargo Tank Washing

(a) Ballast barge fore or aft, depending on location of sumps.

(b) If the ambient temperature is such causing bottoms to be solids due to freezing, steam barge until bottoms are in a liquified condition. Strip pure product left in barge to suitable storage tanks for reclamation. Set up butterworth spinners approximately three feet down from tank top, connect vacuum line to the vessel's discharge header, start vessel's pump engine, engage pump as booster to dock vacuum pump, spin each compartment for approximately 10 minutes with water temperature between 150° and 165°.

(c) Upon the spinning of the compartment, install forced air blowers in the compartments manway and butterworth hatches, blow until gas free, safe for men to enter, see Paragraph 1.3 Characteristics and Safety.

(d) When the tank is safe to enter, hand wash with high pressure hose and water temperature at 130°, all remaining caustic and caustic soda residues from walls and floors. Remove cleanout blinds, open cargo valves and drain remaining water diluted caustic soda from pipelines into cargo tanks.

(e) Upon being assured that all pipelines are free of product or product residue, squeegee compartment floors and

1.2 Cargo Tank Washing (Cont'd)

force air blow compartment walls and floor dry.

(f) Upon completion of the washing operation, install header and cleanout blind flanges with gaskets, close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

1.3 Characteristics and Safety

(a) Due to the characteristic of caustic soda solutions, see attached data sheet, it is a requirement that personnel, prior to tank entry to hand wash, wear the following protective clothing and equipment, rubber boots, rain suits, rubber gloves, and face shields. Inhalation of caustic soda vapors does not present a health hazard, but because of unknown prior cargos, as a margin of safety, install blowers and force air blow compartments prior to entry.

1.4 Waste Water Generated

(a) Method of cleaning will dictate the amount of waste water generated to clean for change of cargo.

(b) Cleaning from caustic soda to an unrelated next product will average about 10,000 gallons of waste water requiring disposal.

1.5 Cost of Cleaning Caustic Soda

(a) The cleaning cost to clean from caustic soda to unrelated next product will average about \$1,257.00 per barge.

Synonyms—Sodium hydroxide, lye

United Nations Number..... 1824

CHRIS Code CS

Formula—NaOH

Appearance—Odor—Colorless or gray; syrupy liquid; no odor

Specific Gravity—up to 1.53 (solid dissolved in water)

Chemical Family—Caustic

Applicable Bulk Regulations 46 CFR Subchapter 0

Boiling Point..... 148 °C 298 °F

Freezing Point..... -41 °C -41 °F

Vapor Pressure 20°C (68°F) (mmHg) 1.7 at 47%

Reid Vapor Pressure (psia)..... Unavailable

Vapor Pressure 46°C (115°F) (psia)..... Unavailable

Vapor Density (Air = 1.0)..... Not pertinent

Solubility in Water..... Complete

FIRE & EXPLOSION HAZARD DATA

Grade—Corrosive liquid

Electrical Group—NA

General—Non-flammable

Flash Point (°F)..... None

Flammable Limits..... None

Autoignition Temp. (°F)..... None

Extinguishing Agents..... None

Special Fire Procedures..... Cannot catch fire. Cool exposed tanks with water.

HEALTH HAZARD DATA

Health Hazard Ratings

0.4,1

Odor Threshold (ppm)

No odor

TLV (ppm)

2mg/m³

General—Causes severe damage to the eyes. On contact with the skin, severe burns with deep ulcerations and ultimate scarring may result.

Symptoms—If the solution splashes onto skin no pain may be felt, but hair and skin touched by caustic will begin to dissolve on contact.

Short Exposure Tolerance—Unavailable.

Exposure Procedures—Do not delay! Flush affected areas gently with plenty of water for at least 15 minutes. Remove contaminated shoes or clothing. Get medical attention. Wash contaminated clothing including shoes.

REACTIVITY DATA

Stability—Heat of dilution of liquid caustic is considerable and variable, depending upon initial and final caustic concentrations.

Compatibility—Material: Noncorrosive to rubber at atmospheric temperatures. Slowly corrosive to iron, copper and monel metal. Reacts with clothing and a few metals, such as aluminum, tin, lead and zinc, and alloys containing these metals.

Cargo: Group 5 of compatibility charts.

SPILL OR LEAK PROCEDURE

Wear rubber gloves, large face shield, and protective clothing. Avoid contact with the liquid. Neutralize with weak acid and mop, or, at dock, flush with excess water.

If a spill occurs, call the National Response Center 800-424-8802.

Remarks: *50 per cent solution
**77 per cent solution

RESPONSE NO. 9



217/785-2893

Refer to: 0438020004 -- DuPage Co.
Hannah Marine Corp. -- S.W.H. Permit #0986
ILD069496248

February 25, 1987

Hannah Marine Corp.
Rt. 83 & Archer Ave.
Lemont, Illinois 60439

Gentlemen:

Special Waste Hauling Permit 0986 is hereby issued to Hannah Marine Corp., to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated February 5, 1987 and consisting of 4 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 6 and 7, attached hereto and incorporated herein by reference, and is further subject to any following conditions.

This permit, issued February 23, 1987, is valid from March 31, 1987, to and through March 31, 1988, for all registered vehicles with State of Illinois license plates.

If you have any questions, please feel free to contact me at 217/785-2361.

Sincerely,

Cynthia D. Ladage
Compliance Assurance Unit
Compliance Monitoring Section
Division of Land Pollution Control

CDL:CN:mab/1686g/18

cc: Northern Region
Division Hauler File



STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT
TO HAUL SPECIAL WASTE
217/782-6761

Applicant: This Application is a:

New Application _____
Renewal X 0986 S.W.H. Permit No.
Added Vehicle _____ S.W.H. Permit No.
Expiration date of previously issued S.W.H. Permit 033185

FOR AGENCY USE ONLY

Expiration Date	Total Vehicles	Transportation
Date	Permitted	Number

APPLICANT: COMPLETE (TYPE OR PRINT IN INK) ITEMS 1 THROUGH 7. IF A SPECIFIC ITEM DOES NOT APPLY TO YOUR COMPANY ENTER N/A. FOR NOT APPLICABLE INCOMPLETE OR PHOTOCOPIED FORMS WILL BE REJECTED. DENIED APPLICATION WILL RESULT IN FORFEITURE OF \$100.00 SPECIAL WASTE HAULING PERMIT APPLICATION FEE.

1. Hannah Marine Corporation
Business Name of Hauling Company
Rt. 83 & Archer, Lemont, IL 60439
Company Location (Not P.O. Box)
Rt. 83 & Archer Ave.
Mailing Address
Lemont, IL 60439
City State Zip
DuPage
County
Business Phone 312 / 257-5457

1-A Name and Home Address of Principal or Authorized Representative and Business Title

George Votava, Manager
4420 Cross Street

Downers Grove, IL 60515

Emergency Phone 312 / 242-3210

2. Hannah Marine Corporation
Business Name of Owner of Vehicles
Rt. 83 & Archer Ave.
Address
Lemont, IL 60439
City State Zip
DuPage
County
Business Phone 312 / 257-5457

2-A Name and Home Address of Principal or Authorized Representative and Business Title

Paul J. Eaker, Mgr. Barge Operations
840 Summit Drive

Lockport, IL 60441

Emergency Phone 312 / 242-3210

NOTE: SEPARATE APPLICATION (INCLUDING \$100.00 APPLICATION FEE) MUST BE SUBMITTED FOR EACH ADDITIONAL OWNER.

3. EFFECTIVE JANUARY 1, 1985, IN ACCORDANCE WITH SECTION 22.2 OF THE ENVIRONMENTAL PROTECTION ACT, EACH APPLICATION RECEIVED ON OR AFTER JANUARY 1, 1985 MUST BE ACCOMPANIED BY \$100.00 SPECIAL WASTE HAULING PERMIT APPLICATION FEE (CASHIER'S CHECK, CERTIFIED CHECK, OR MONEY ORDER) MADE PAYABLE TO TREASURER, STATE OF ILLINOIS. ENCLOSED IS (CHECK ONE)
CASHIER CHECK X CERTIFIED CHECK _____ MONEY ORDER _____
4. NA Do you have an Illinois Commerce Commission Certificate? YES _____ NO X If yes list Certificate Number _____
5. NA Do you have an Interstate Commerce Commission Certificate? YES _____ NO X If yes list Certificate Number _____
6. X Have you been issued a Federal Hazardous Waste Transporter Identification Number? YES X NO _____
If yes list Federal Identification Number 1-180-6-9-4-9-6-2-4-8
7. Vehicle Descriptions. Provide information for each vehicle to be approved to haul special waste on following page(s). (Up to 29 vehicles per sheet).

I, the undersigned, certify that the information contained herein is true and complete and that the removal, transporting and disposal, storage or treatment of special wastes will comply with all requirements of Title 35, Section 809.202.

George Votava 2-5-87
Signature of Hauling Company Manager Date
(or Authorized Representative)

Paul J. Eaker 2-5-87
Signature of Vehicle Owner Date
(or Authorized Representative)

(Both must be signed and dated)

Use the enclosed, preprinted mailing label to send the application to:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
MANIFEST SUB-UNIT
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

RECEIVED

FEB 17 1987

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

FOR AGENCY USE ONLY
Chelson 2-23-87
Reviewed By Date

FOR AGENCY USE ONLY
1 Cynthia D. Latham 2-23-87
Issued Date
Expiration Date Mar. 31, 1988

HANNAH MARINE CORPORATION

Company Name

Mar 31 1988 0986

7. State from which license plates are issued, license plate number(s), vehicle (parts a and b) and description (parts a and b) must be completed for each vehicle to be permitted. Tractor-trailer units, complete information for trailer only. Roll-off boxes, complete information for tractor and give a range for "capacity".

BE SURE APPLICATION IS COMPLETE!

STATE LICENSE
PLATE NO.

VEHICLE

DESCRIPTION

a. State b. License Plate	a. Make-Model-Year b. Identification No.	a. Type (tank trailer, flatbed, rolloff, etc.) b. Capacity (gal, barrels, cu. ft.)
1. a. ILLINOIS b. P-40711	a. INT'L TANK 74 b. A5057DGB18928	a. TANK TRUCK b. 3,700 Gals. Capacity
2. a. ILLINOIS b. 8054-J	a. CHEVY STAKE 79 b. C17DB9V127084	a. FLATBED (STAKE) b. 12' LONG
3. a. N/A b. N/A	a. HANNAH VAC TANK 83 b. SYD 3891PVT	a. VAC TANK b. 1,500 GAL. CAPACITY
4. a. b.	a. b.	a. b.
5. a. b.	a. b.	a. b.
6. a. b.	a. b.	a. b.
7. a. b.	a. b.	a. b.
8. a. b.	a. b.	a. b.
9. a. b.	a. b.	a. b.
10. a. b.	a. b.	a. b.
11. a. b.	a. b.	a. b.
12. a. b.	a. b.	a. b.
13. a. b.	a. b.	a. b.

RECEIVED

FEB 17 1987

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217/785-2361

Refer to: DuPage -- S.W.H. Permit #0986
Burr Ridge -- Hannah Marine Corp.

February 21, 1986

Hannah Marine Corporation
361 Frontage Road, Suite 101
Burr Ridge, Illinois 60521

Gentlemen:

Special Waste Hauling Permit 0986 is hereby issued to Hannah Marine Corporation, to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated January 28, 1986 and consisting of four page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 6 and 7, attached hereto and incorporated herein by reference, and is further subject to any following conditions.

This permit, issued February 18, 1986, is valid from March 31, 1986, to and through March 31, 1987, for all registered vehicles with State of Illinois license plates.

If you have any questions, please feel free to contact me at 217/785-2361.

Sincerely,

Cynthia D. Ladage
Compliance Assurance Unit
Compliance Monitoring Section
Division of Land Pollution Control

CDL:CN:jd/0321F/44

cc: Northern Region
Division Hauler File



STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT
TO HAUL SPECIAL WASTE
217/782-6761

Applicant: This Application is a:

New Application _____
Renewal X Q 9 B 6 S.W.H. Permit No.
Added Vehicle _____ S.W.H. Permit No.
Expiration date of previously issued S.W.H. Permit 0 3 / 3 1 8 6

FOR AGENCY USE ONLY

Mar. 31, 1987 0003 0986
Expiration Date Total Vehicles Permitted Transporter Number

APPLICANT: COMPLETE (TYPE OR PRINT IN INK) ITEMS 1 THROUGH 7. IF A SPECIFIC ITEM DOES NOT APPLY TO YOUR COMPANY ENTER N/A. FOR NOT APPLICABLE, INCOMPLETE OR PHOTOCOPIED FORMS WILL BE REJECTED. DENIED APPLICATION WILL RESULT IN FORFEITURE OF \$100.00 SPECIAL WASTE HAULING PERMIT APPLICATION FEE.

1. Hannah Marine Corporation
Business Name of Hauling Company
Kingery Rd. at Archer, Lemont, IL 60439
Company Location (Not P.O. Box)
361 Frontage Rd., Suite 101
Mailing Address
Burr Ridge, IL 60521
City State Zip
DuPage
County
Business Phone 312 / 242-3210

1-A. Name and Home Address of Principal or Authorized Representative and Business Title

Joseph C. Barnas, General Manager
125 Archer Avenue
Lemont, IL 60439

Emergency Phone 312 / 257-5458

2. Hannah Marine Corporation
Business Name of Owner of Vehicles
361 Frontage Rd., Suite 101
Address
Burr Ridge, IL 60521
City State Zip
DuPage
County
Business Phone 312 / 242-3210

2-A. Name and Home Address of Principal or Authorized Representative and Business Title

George Votava, Safety Director
4420 Cross Street
Downers Grove, IL 60515

Emergency Phone 312 / 257-5458

NOTE: SEPARATE APPLICATION (INCLUDING \$100.00 APPLICATION FEE) MUST BE SUBMITTED FOR EACH ADDITIONAL OWNER.

3. EFFECTIVE JANUARY 1, 1985, IN ACCORDANCE WITH SECTION 22.2 OF THE ENVIRONMENTAL PROTECTION ACT, EACH APPLICATION RECEIVED ON OR AFTER JANUARY 1, 1985 MUST BE ACCOMPANIED BY \$100.00 SPECIAL WASTE HAULING PERMIT APPLICATION FEE (CASHIER'S CHECK, CERTIFIED CHECK, OR MONEY ORDER) MADE PAYABLE TO TREASURER, STATE OF ILLINOIS. ENCLOSED IS (CHECK ONE)
CASHIER CHECK _____ CERTIFIED CHECK _____ MONEY ORDER _____

4. NA Do you have an Illinois Commerce Commission Certificate? YES _____ NO X If yes list Certificate Number _____

5. NA Do you have an Interstate Commerce Commission Certificate? YES _____ NO X If yes list Certificate Number _____

6. X Have you been issued a Federal Hazardous Waste Transporter Identification Number? YES X NO _____

If yes list Federal Identification Number 11D069496248

7. Vehicle Descriptions. Provide information for each vehicle to be approved to haul special waste on following page(s). (Up to 29 vehicles per sheet).

I, the undersigned, certify that the information contained herein is true and complete and that the removal, transporting and disposal, storage or treatment of special wastes will comply with all requirements of Title 35, Section 809.202.

[Signature] 1-28-86
Signature of Hauling Company Manager Date
(or Authorized Representative)

[Signature] 1-28-86
Signature of Vehicle Owner Date
(or Authorized Representative)

(Both must be signed and dated)

Use the enclosed, preprinted mailing label to send the application to:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
MANIFEST SUB-UNIT
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

FOR AGENCY USE ONLY

[Signature]
Reviewed By

2-18-86
Date

IEPA-DLPC

FOR AGENCY USE ONLY

[Signature]
Issued

2-18-86
Date

Expiration Date: Mar. 31, 1987

VEHICLE DESCRIPTION SHEET

FOR AGENCY USE ONLY

HANNAH MARINE CORPORATION

Company Name

Mar. 31, 1987

Expiration Date

0986

Transporter Number

7. State from which license plates are issued, license plate number(s), vehicle (parts a and b) and description (parts a and b) must be completed for each vehicle to be permitted. Tractor-trailer units, complete information for trailer only. Roll-off boxes, complete information for tractor and give a range for "capacity".

BE SURE APPLICATION IS COMPLETE!

STATE LICENSE
PLATE NO.

VEHICLE

DESCRIPTION

	a. State b. License Plate	a. Make-Model-Year b. Identification No.	a. Type (tank trailer, flatbed, rolloff, etc.) b. Capacity (gal., barrels, cu. ft.)
1.	a. ILLINOIS b. P-40711	a. INT'L TANK 74 b. A5057DGB18928	a. TANK TRUCK b. 3,700 GALS. CAPACITY
2.	a. ILLINOIS b. 8054-J	a. CHEVY STAKE 79 b. C17DB9V127084	a. FLATBED (STAKE) b. 12' LONG
3.	a. N/A b. N/A	a. HANNAH VAC TANK 83 b. SYD 3891PVT	a. VAC TANK b. 1,500 GAL. CAPACITY
4.	a. b.	a. b.	a. b.
5.	a. b.	a. b.	a. b.
6.	a. b.	a. b.	a. b.
7.	a. b.	a. b.	a. b.
8.	a. b.	a. b.	a. b.
9.	a. b.	a. b.	a. b.
10.	a. b.	a. b.	a. b.
11.	a. b.	a. b.	a. b.
12.	a. b.	a. b.	a. b.
13.	a. b.	a. b.	a. b.

RECEIVED

JAN 30 1988

179A-DLPC



217/785-2361

Refer to: DuPage Co. -- S.W.H. Permit #0986
Burr Ridge, IL -- Hannah Marine Corp.

February 14, 1985

Hannah Marine Corp.
361 Frontage Road -- Suite 101
Burr Ridge, Illinois 60521

Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corp., to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated January 28, 1985 and consisting of 4 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 6 and 7, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit, issued February 11, 1985, is valid from March 31, 1985, to and through March 31, 1986, for all registered vehicles with State of Illinois license plates.

If you have any questions, please contact Cindy Ladage of my staff.

Sincerely,

Gregory T. Zak
Gregory T. Zak, Manager
Compliance Assurance Unit
Compliance Monitoring Section
Division of Land Pollution Control

GTZ:CN:rd0348E/5

cc: Northern Region
Division Hauler File



STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT
TO HAUL SPECIAL WASTE
217/782-6761

Applicant: This Application is a:

FOR AGENCY USE ONLY

New Application _____
Renewal X 0 9 8 5 S.W.H. Permit No.
Added Vehicle _____ S.W.H. Permit No.
Expiration date of previously issued S.W.H. Permit 0 3 / 3 1 / 8 5

Mar. 31, 1986 0004 0986
Expiration Date Total Vehicles Transporter
Permitted Number

APPLICANT: COMPLETE (TYPE OR PRINT IN INK) ITEMS 1 THROUGH 7. IF A SPECIFIC ITEM DOES NOT APPLY TO YOUR COMPANY ENTER N/A. FOR NOT APPLICABLE. INCOMPLETE OR PHOTOCOPIED FORMS WILL BE REJECTED. DENIED APPLICATION WILL RESULT IN FORFEITURE OF \$100.00 SPECIAL WASTE HAULING PERMIT APPLICATION FEE.

1. Hannah Marine Corporation
Business Name of Hauling Company
Kingery Rd. at Archer, Lemont, IL 60439
Company Location (Not P.O. Box)
361 Frontage Rd., Suite 101
Mailing Address
Burr Ridge IL 60521
City State Zip
DuPage
County
Business Phone 312 / 242-3210

1-A. Name and Home Address of Principal or Authorized Representative and Business Title

George Votava, Manager

4420 Cross Street

Downers Grove, IL 60515

Emergency Phone 312 / 242-3210

2. Hannay Marine Corporation
Business Name of Owner of Vehicles
361 Frontage Rd., Suite 101
Address
Burr Ridge IL 60521
City State Zip
DuPage
County
Business Phone 312 / 242-3210

2-A. Name and Home Address of Principal or Authorized Representative and Business Title

Paul J. Eaker, Safety Director

840 Summit Drive

Lockport, IL 60441

Emergency Phone 312 / 242-3210

NOTE: SEPARATE APPLICATION (INCLUDING \$100.00 APPLICATION FEE) MUST BE SUBMITTED FOR EACH ADDITIONAL OWNER.

3. EFFECTIVE JANUARY 1, 1985, IN ACCORDANCE WITH SECTION 22.2 OF THE ENVIRONMENTAL PROTECTION ACT, EACH APPLICATION RECEIVED ON OR AFTER JANUARY 1, 1985 MUST BE ACCOMPANIED BY \$100.00 SPECIAL WASTE HAULING PERMIT APPLICATION FEE (CASHIER'S CHECK, CERTIFIED CHECK, OR MONEY ORDER) MADE PAYABLE TO TREASURER, STATE OF ILLINOIS. ENCLOSED IS (CHECK ONE)
CASHIER CHECK X CERTIFIED CHECK _____ MONEY ORDER _____
4. NA Do you have an Illinois Commerce Commission Certificate? YES _____ NO X If yes list Certificate Number _____
5. NA Do you have an Interstate Commerce Commission Certificate? YES _____ NO X If yes list Certificate Number _____
6. X Have you been issued a Federal Hazardous Waste Transporter Identification Number? YES X NO _____
If yes list Federal Identification Number IL D 0 6 9 4 9 6 2 4 8
7. Vehicle Descriptions. Provide information for each vehicle to be approved to haul special waste on following page(s). (Up to 29 vehicles per sheet.)

I, the undersigned, certify that the information contained herein is true and complete and that the removal, transporting and disposal, storage or treatment of special wastes will comply with all requirements of Title 35, Section 809.202.

George Votava 1-28-85
Signature of Hauling Company Manager Date
(or Authorized Representative)

Paul J. Eaker 1-28-85
Signature of Vehicle Owner Date
(or Authorized Representative)

(Both must be signed and dated)

Use the enclosed, preprinted mailing label to send the application to:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
MANIFEST SUB-UNIT
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1.2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

RECEIVED

FOR AGENCY USE ONLY

Reviewed By CN

Date 2-11-85

JAN 30 1985

IEPA-DLPC

181

FOR AGENCY USE ONLY

Expiration Date: Mar. 31, 1986

VEHICLE DESCRIPTION SHEET

FOR AGENCY USE ONLY

HANNAH MARINE CORPORATION

Company Name

3-31-86

Expiration Date

0986

Transporter Number

7. State from which license plates are issued, license plate number(s), vehicle (parts a and b) and description (parts a and b) must be completed for each vehicle to be permitted. Tractor-trailer units, complete information for trailer only. Roll-off boxes, complete information for tractor and give a range for "capacity"

BE SURE APPLICATION IS COMPLETE!

STATE LICENSE
PLATE NO.

VEHICLE

DESCRIPTION

a. State b. License Plate	a. Make-Model-Year b. Identification No.	a. Type (tank trailer; flatbed, rolloff, etc.) b. Capacity (gal., barrels, cu. ft.)
1. a. ILLINOIS b. P-40711	a. INT'L TANK 74 b. A5057DGB18928	a. TANK TRUCK b. 3,700 GALS. CAPACITY
2. a. ILLINOIS b. 8422-K	a. FORD STAKE 76 b. N70EVB87101	a. FLATBED (STAKE) b. 18' LONG
3. a. ILLINOIS b. 8054-J	a. CHEVY STAKE 79 b. C17DB9V127084	a. FLATBED (STAKE) b. 12' LONG
4. a. N/A b. N/A	a. HANNAH VAC TANK 83 b. SYD 3891PVT	a. VAC TANK b. 1,500 GAL. CAPACITY
5. a. b.	a. b.	a. b.
6. a. b.	a. b.	a. b.
7. a. b.	a. b.	a. b.
8. a. b.	a. b.	a. b.
9. a. b.	a. b.	a. b.
10. a. b.	a. b.	a. b.
11. a. b.	a. b.	a. b.
12. a. b.	a. b.	a. b.
13. a. b.	a. b.	a. b.

RECEIVED

JAN 30 1985

IEPA-DLPC

182



217/785-2361

Refer to: DuPage County -- S.W.H. Permit #0986
Burr Ridge -- Hannah Marine Corp.

March 14, 1984

Hannah Marine Corporation
361 Frontage Road, Suite 101
Burr Ridge, Illinois 60521


Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corp., to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated March 6, 1984 and consisting of 1 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 3 and 4, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit, issued March 13, 1984, is valid from March 13, 1984, to and through March 31, 1985, for all registered vehicles with State of Illinois license plates.

Sincerely,


Stephen A. Colantino, Manager
Manifest Sub-Unit
Compliance Monitoring Section
Division of Land Pollution Control

SAC:CN:bls/0538D,22

cc: Northern Region
Division Hauler File

New ☐
Renewal ☒
Add. Vehicle 0986
S.W.H. Number

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT
TO HAUL SPECIAL WASTE

FOR AGENCY USE ONLY

0986 09861001 thru 09861004
Hauler No. Vehicle Nos.

APPLICANT: COMPLETE (PRINT OR TYPE) ITEMS 1 THROUGH 8

1. Hannah Marine Corporation
Business Name of Operator of Vehicles
361 Frontage Road, Suite 101
Address
Burr Ridge, Illinois
City State
DuPage 60521
County Zip

2. Name and Home Address of Principal or Authorized Representative and Business Title
William W. Wilson, Vice-President
13725 Kiowa Court
Lockport, IL 60441

3. Business Phone 312-242-3210 4. Emergency Phone 312-242-3210

(Note: If owner of vehicles is different than operator of vehicles, complete information required in Items 1 through 3 for owner on separate sheet)

5. List Illinois Cities with Branch Offices

Cook - DuPage - Will - Lake

6. List Illinois Counties That Are Served

Indiana - Michigan - Wisconsin

7. List Other States That Are Served

8. Do you have an Illinois Commerce Commission Certificate? YES ☐ NO ☒ If yes list Certificate Number

9. Do you have an Interstate Commerce Commission Certificate? YES ☐ NO ☒ If yes list Certificate Number

10. VEHICLE DESCRIPTIONS: Provide information for each vehicle to be approved to haul special waste. This includes tank trailer units, flatbeds, and rolloff containers.

STATE LICENSE PLATE NO.	VEHICLE a. Make-Model-Year b. Identification No.	TANK DESCRIPTION a. Type (tank trailer, flatbed, rolloff, etc.) b. Capacity (gal., barrels, cu.ft.)	FOR AGENCY USE ONLY
			ILLINOIS EPA VEHICLE NUMBERS
<u>P. 40711</u> <u>P O 49797</u>	<u>a. Int'l Tank 74'</u> <u>b. A5057DGB18928</u>	<u>a. Vac Truck</u> <u>b. 3,700 gallon capacity</u>	<u>0986 1001</u>
<u>8422 K-85</u> <u>5013 K</u>	<u>a. Ford Stake 76'</u> <u>b. N70EVB87101</u>	<u>a. FlatBed (stake)</u> <u>b. 18 ft. Long</u>	<u>0986 1002</u>
<u>8954 J-85</u> <u>11996J</u>	<u>a. Chevy Stake 79'</u> <u>b. C17DB9V127084</u>	<u>a. FlatBed (stake)</u> <u>b. 12' long</u>	<u>0986 1003</u>
<u>N/A</u>	<u>a. Hannah Vac Tank 83'</u> <u>b. SYD 3891PVT</u>	<u>a. Vac Tank</u> <u>b. 1,500 gallon capacity</u>	<u>0986 1004</u>
	<u>a.</u> <u>b.</u>	<u>a.</u> <u>b.</u>	

(If additional space is necessary, use reverse side)

I, the undersigned, certify that the information contained herein is true and complete and that the removal, transporting and disposal, storage or treatment of special wastes will comply with all requirements of Chapter 9: Special Waste Hauling Regulations. I further certify that all requirements of Rule 202(C) of Chapter 9 will be complied with.

William W. Wilson
Signature of Owner
(or Authorized Representative)

3/6/84
Date

William W. Wilson
Signature of Operator
(or Authorized Representative)

3/6/84
Date

Mail Completed Application to:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
SPECIAL WASTE HAULING UNIT
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

RECEIVED

MAR 12 1984

EPA - D.L.P.C.
STATE OF ILLINOIS

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter II 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

FOR AGENCY USE ONLY

Reviewed By Stephen A. Chait Date 03-13-84



217/785-2361

Refer to: DuPage Co. — S.W.H. Permit #0986
Lemont, Illinois -- Hannah Marine Corporation

March 24, 1983

Hannah Marine Corporation
Kingery Road at Archer Avenue
Lemont, Illinois 60439

Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corporation, to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated March 15, 1983 and consisting of 1 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 3 and 4, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit, issued March 21, 1983, is valid from March 21, 1983, to and through March 31, 1984, for all registered vehicles with State of Illinois license plates.

Sincerely,

Stephen A. Colantino, Manager
Manifest Sub-Unit
Compliance Monitoring Section
Division of Land Pollution Control

SAC:CN:sd/6737c/30

cc: Northern Region
Division Hauler File

New _____
Renewal X
Add. Vehicle 0986001
S.W.H. Number _____

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT
TO HAUL SPECIAL WASTE

FOR AGENCY USE ONLY

0986 09861001 thru 09861003
Hauler No. Vehicle Nos.

APPLICANT: COMPLETE (PRINT OR TYPE) ITEMS 1 THROUGH 8

1. Hannah Marine Corporation
Business Name of Operator of Vehicles
Kingery Rd. at Archer Avenue
Address
Lemont IL
City State
DuPage 60439
County Zip

2. Name and Home Address of Principal or Authorized Representative and Business Title
William W. Wilson - Shipyard Manager
13725 Kiowa Court
Lockport, IL 60441

3. Business Phone 257-5457 4. Emergency Phone 242-321

(Note: If owner of vehicles is different than operator of vehicles, complete information required in Items 1 through 3 for owner on separate sheet)

5. List Illinois Cities with Branch Offices

Cook, DuPage, Will, Lake

6. List Illinois Counties That Are Served

Indiana, Michigan, Wisconsin

7. List Other States That Are Served

8. Do you have an Illinois Commerce Commission Certificate? YES ☐ NO ☐ If yes list Certificate Number _____

9. Do you have an Interstate Commerce Commission Certificate? YES ☐ NO ☐ If yes list Certificate Number _____

10. VEHICLE DESCRIPTIONS: Provide information for each vehicle to be approved to haul special waste. This includes tank trailer units, flatbeds, and rolloff containers.

STATE LICENSE PLATE NO.	VEHICLE a. Make-Model-Year b. Identification No.	TANK DESCRIPTION a. Type (tank trailer, flatbed, rolloff, etc.) b. Capacity (gal., barrels, cu.ft.)	FOR AGENCY USE ONLY
			ILLINOIS EPA VEHICLE NUMBERS
P049797	a. Int'l Tank 74 b. A5057DGB18928	a. Tank b. 3700 Gallon	<u>0986 1 001</u>
5013K	a. Ford Stake 76 b. N70EVB87101	a. Flatbed (Stake) b. 18 Ft. Long	<u>0986 1 002</u>
11996 J	a. Chevy Stake 79 b. C17DB9V127084	a. Flatbed (Stake) b. 12 Ft. Long	<u>0986 1 003</u>
	a. b.	RECEIVED	<u>1</u>
	a. b.	a. MAR 17 1983 b. E.P.A. - D.L.P.C.	<u>1</u>

STATE OF ILLINOIS

(If additional space is necessary, use reverse side)

I, the undersigned, certify that the information contained herein is true and complete and that the removal, transporting and disposal, storage or treatment of special wastes will comply with all requirements of Chapter 9: Special Waste Hauling Regulations. I further certify that all requirements of Rule 202(c) of Chapter 9 will be complied with.

William W. Wilson 3/15/83
Signature of Owner Date
(or Authorized Representative)

William W. Wilson 3/15/83
Signature of Operator Date
(or Authorized Representative)

Mail Completed Application to:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
SPECIAL WASTE HAULING UNIT
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

FOR AGENCY USE ONLY

Reviewed By

3/21/83
Date

186

FOR AGENCY USE ONLY

Issued

Date



217/785-2361

Refer to: DuPage Co. — S.W.H. Permit #0986
Lemont, Illinois -- Hannah Marine Corporation

March 24, 1983

Hannah Marine Corporation
Kingery Road at Archer Avenue
Lemont, Illinois 60439

Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corporation, to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated March 15, 1983 and consisting of 1 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 3 and 4, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit, issued March 21, 1983, is valid from March 21, 1983, to and through March 31, 1984, for all registered vehicles with State of Illinois license plates.

Sincerely,

Stephen A. Colantino, Manager
Manifest Sub-Unit
Compliance Monitoring Section
Division of Land Pollution Control

SAC:CN:sd/6737c/30

cc: Northern Region
Division Hauler File

61003

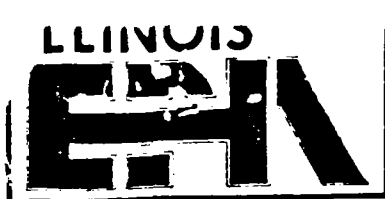
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ENVIRONMENTAL PROTECTION Agency

2200 Churchill Road, Springfield, Illinois 62706

217/782-6760

SWH Permit #0986

June 15, 1981

Hannah Marine Corporation
Kingery Road at Archer Avenue
Lemont, Illinois 60439

Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corporation, to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated June 2, 1981 and consisting of 1 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 3, 4, 5, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit is valid from June 9, 1981, to and through June 9, 1982, for all registered vehicles with State of Illinois license plates.

Very truly yours,

Andrew A. Vollmer, Manager
Manifest Branch
Residual Management Section
Division of Land/Noise Pollution Control

Thomas E. Cavanagh, Jr., Manager
Residual Management Section
Division of Land/Noise Pollution Control

AAV:TEC:SAC:jfd/0930C,25

cc: Northern Region
File

Renewal _____

Add. Vehicle _____
S.W.H. Number _____ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT
TO HAUL SPECIAL WASTE

FOR AGENCY USE ONLY

0986 0986.1001 thru 0986.1003
Hauler No. Vehicle Nos.

APPLICANT: COMPLETE (PRINT OR TYPE) ITEMS 1 THROUGH 8

1. Hannah Marine Corporation
Business Name of Operator of Vehicles
Kingery Rd. at Archer Ave.
Address
Lemont IL
City State
DuPage 60439
County Zip2. Name and Home Address of Principal or Authorized Representative
and Business Title
Deno V. Fabbre - Shipyard Manager
1640 Royal Oak
Darien, IL 605593. Business Phone
(312) 242-32104. Emergency Phone (24 Hour)
Same

(NOTE: If owner of vehicles is different than operator of vehicles, complete information required in Items 1 through 3 for owner on separate sheet.)

5. List Illinois Cities with Branch Offices

RECEIVED

6. List Illinois Counties That Are Served

JUN 05 1981

Cook, DuPage, Will, Lake

7. List Other States That Are Served

E.P.A. - D.L.P.C.

Indiana, Michigan, Wisconsin

STATE OF ILLINOIS

8. VEHICLE DESCRIPTIONS: Provide information for each vehicle to be approved to haul special waste. This includes tank trailer units, flatbeds, and rolloff containers.

STATE LICENSE PLATE NO.	VEHICLE a. Make-Model-Year b. Identification No.	TANK DESCRIPTION a. Type (tank trailer, flatbed, rolloff, etc.) b. Capacity (gal., barrels, cu.ft.)	FOR AGENCY USE ONLY
			ILLINOIS EPA VEHICLE NUMBERS
P049797	a. Int'l Tank 74 b. A5057DGB18928	a. Tank b. 3700 Gal.	0986 1001
2798 K	a. Ford Stake 76 b. N70EVB87101	a. Flatbed (Stake) b. 18 Ft. Long	0986 1002
11996 J	a. Chev Stake 79 b. C17DB9V127084	a. Flatbed (Stake) b. 12 Ft. Long	0986 1003
	a. b.	a. b.	
	a. b.	a. b.	
	a. b.	a. b.	

(If additional space is necessary, use reverse side.)


I, the undersigned, certify that the information contained herein is true and complete and that the removal, transporting and disposal, storage or treatment of special wastes will comply with all requirements of Chapter 9: Special Waste Hauling Regulations. I further certify that all requirements of Rule 202(C) of Chapter 9 will be complied with.

Deno V. Fabbre 6-2-81
Signature of Owner Date
(or Authorized Representative)Deno V. Fabbre 6-2-81
Signature of Operator Date
(or Authorized Representative)Mail Completed Application To: ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL - SPECIAL WASTE HAULING UNIT
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

FOR AGENCY USE ONLY

FOR AGENCY USE ONLY

Andrew J. Volkm 6-9-81
Reviewed By DateThomas E. Cavanaugh, Jr. 6/9/81
Issued Date
KLC


- RESPONSE NO. 10 -



Browning-Ferris Industries

CHEMICAL SERVICES, INC.
P. O. Box A
Lemont, IL 60439
PHONE (312) 257-7707

25006186

NUMBER

INVOICE
TO

Hannah Inland Waterways Transport
Route 83 and Route 171
Lemont, IL 60439

Attn: Dave Updegraff

SLIP	JOB	PURCHASE ORDER	
05	0375	Verbal per Dave Updegraff	
NO	NO	REQUISITION NO.	
CUSTOMER		INVOICE DATE	TERMS
New		12/19/79	Net/30
NUMBER	MO	DAY	YR

GENERAL DESCRIPTION OF WORK PERFORMED

ONSITE CLEAN UP OF BARGE CLEANING WASTES

DEPT.	CHEM CODE	TAX CODE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1010			12/13/79				
			Loader	9.50	hrs	104.00	\$ 988.00 ✓
			Transport to Waukegan	10	lds	310.00	3,100.00 ✓
			Disposal	180	cy	22.50	4,050.00 ✓
			12/14/79				
			Loader	9.50	hrs	104.00	988.00 ✓
			Transport to Waukegan	10	lds	310.00	3,100.00 ✓
			Disposal	180	cy	22.50	4,050.00 ✓
			12/17/79				
			Loader	10.0	hrs	104.00	1,040.00 ✓
			Transport to Waukegan	10	lds	310.00	3,100.00 ✓
			Disposal	180	cy	22.50	4,050.00 ✓
			12/18/79				
			Loader	9.25	hrs	104.00	962.00 ✓
			Transport to Waukegan	10	lds	310.00	3,100.00 ✓
			Disposal	180	cy	22.50	4,050.00 ✓
			SUB-TOTAL				\$32,578.00

TO INSURE PROMPT AND ACCURATE CREDITING OF YOUR
ACCOUNT INCLUDE WITH YOUR REMITTANCE

① CUSTOMER NUMBER ② INVOICE NUMBER

PLEASE REMIT TO: BFI

P. O. BOX 200,070 HOUSTON, TEXAS 77216

TOTAL
\$ 32,578.00
AMOUNT DUE

ORIGINAL INVOICE



Browning-Ferris Industries

CHEMICAL SERVICES, INC.

SERVICE RECEIPT AND LOG

Service Receipt No. _____

P. O. No. _____

Plant

LEWIS & CLARK

Division

2nd

Bldg. No. _____

Equipment

LOADER

Job Scope _____

BFI-Chemical Services Div., Inc.

Job No. _____

Req. No. _____

J. O. or Acct. No. _____

EQUIPMENT

TRUCK NO.	TYPE	ARRIVAL		DEPARTURE		REMARKS
		DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	
<u>10</u>	<u>12</u>	<u>6-30</u>	<u>4:00</u>			<u>NO LUNCH</u>
						<u>11-2V John</u>
						<u>12-12-79</u>

LABOR

NO. & CLASSIFICATION	ARRIVAL		DEPARTURE		REMARKS
	DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	

CHEMICALS

NAME	QUANTITY	REMARKS

MISCELLANEOUS

(Hoses, Rental Equip., Extra Pumps, Hauling On Spent Chemicals, Etc.)

DESCRIPTION	QUANTITY	REMARKS

PREPARE IN TRIPLICATE: 1st & 2nd Copy - Return With Job Log
AND SIGN 3rd Copy - Give to Customer



Browning-Ferris Industries

CHEMICAL SERVICES, INC.

SERVICE RECEIPT AND LOG

Service Receipt No. _____ P. O. No. _____

Plant HAWAII Division LE MONT T-DRUM Bldg. No. _____

Equipment LOADER Job Scope SLUDGE CLEAN UP

BFI-Chemical Services Div., Inc.

Job No. _____ Req. No. _____ J. O. or Acct. No. _____

EQUIPMENT

TRUCK NO.	TYPE	ARRIVAL		DEPARTURE		REMARKS
		DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	
141	17	530	7:11	4:00		6 LUNCH
						Sludge cleaned 12-17-79
145	18	545	7:11	2:30		6 LUNCH
						Sludge cleaned 12-18-79

LABOR

NO. & CLASSIFICATION	ARRIVAL		DEPARTURE		REMARKS
	DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	

CHEMICALS

NAME	QUANTITY	REMARKS

MISCELLANEOUS

(Hoses, Rental Equip., Extra Pumps, Hauling Off Spent Chemicals, Etc.)

DESCRIPTION	QUANTITY	REMARKS

PREPARE IN TRIPLICATE: 1st & 2nd Copy - Return With Job Log
AND SIGN 3rd Copy - Give to Customer



Browning-Ferris Industries

CHEMICAL SERVICES, INC.

SERVICE RECEIPT AND LOG

Service Receipt No. _____ P. O. No. _____

Plant HANNAH Division LEMON TERRACE Bldg. No. _____

Equipment LOADER Job Scope SLUDGE

FI-Chemical Services Div., Inc.

Job No. _____ Req. No. _____ J. O. or Acct. No. _____

EQUIPMENT

JCK NO.	TYPE	ARRIVAL		DEPARTURE		REMARKS
		DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	
80	11/	1030	4:30			SLUDGE

LABOR

NO. & CLASSIFICATION	ARRIVAL		DEPARTURE		REMARKS
	DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	

CHEMICALS

NAME	QUANTITY	REMARKS

MISCELLANEOUS

(Hoses, Rental Equip., Extra Pumps, Hauling Off Spent Chemicals, Etc.)

DESCRIPTION	QUANTITY	REMARKS

PREPARE IN TRIPLICATE: 1st & 2nd Copy - Return With Job Log
AND SIGN 3rd Copy - Give to Customer

0017

OPERATOR

CUSTOMER REPRESENTATIVE

Browning - Ferris Lindquist
FOSTER

VOUCHER NO. 11-562
CHECK NO. Cash
DATE PAID 12/14/79

[illegible]

EXPLANATION:

AUDITED	APPROVED	ENTERED	DATE ENTERED
---------	----------	---------	-----------------

ASCAD® L1-C265C

PRINTED IN U.S.A.

SERVICE RECEIPT AND LOG

Service Receipt No. _____

P. O. No. _____

Plant HAWAIIDivision LEMON TERNAL

Bldg. No. _____

Equipment LOADER

Job Scope _____

BFI-Chemical Services Div., Inc.

Job No. _____

Req. No. _____

J. O. or Acct. No. _____

EQUIPMENT

TRUCK NO.	TYPE	ARRIVAL		DEPARTURE		REMARKS
		DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	
150	12	12-12-79	4:00			NO LUNCH
						David V. Feltner
						12-12-79
151	12	12-12-79	11:30	12-12-79	12:00	

LABOR

NO. & CLASSIFICATION	ARRIVAL		DEPARTURE		REMARKS
	DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	

CHEMICALS

NAME	QUANTITY	REMARKS

MISCELLANEOUS

(Hoses, Rental Equip., Extra Pumps, Hauling Off Spent Chemicals, Etc.)

DESCRIPTION	QUANTITY	REMARKS

PREPARE IN TRIPPLICATE: 1st & 2nd Copy - Return With Job Log
AND SIGN 3rd Copy - Give to Customer

Form 200-A

OPERATOR

CUSTOMER REPRESENTATIVE

Browning-Ferris Industries

CHEMICAL SERVICES, INC.
P. O. Box A
Lemont, IL 60439
PHONE (312) 257-7707

NUMBER

INVOICE
TO

Hannah Inland Waterways Transport
Route 83 and Route 171
Lemont, IL 60439

ATTN: David Updegraff

ELM	JOB	PURCHASE ORDER	
11	0375	Verbal Dave Updegraff	
NO	NO	REQUISITION NO.	
CUSTOMER		INVOICE DATE	TERMS
NEW		12/14/79	Net 30
NUMBER		MO DAY YR	

GENERAL DESCRIPTION OF WORK PERFORMED

Onsite Clean Up of Barge Cleaning Wastes.

DEPT.	CHEM CODE	TAX CODE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			11/7 Permit & Analysis (1107-I-01, 10,000 gals barge cleanings & water)	1	P&A	402.00	402.00
			11/8 Transport - WKGN Disposal Liquid	1 4500	ld. gal	310.00 0.16	310.00 720.00
			12/4 Permit & Analysis (1204-I-01, 1,500 cy contaminated soil)	1	P&A	402.00	402.00
			12/9 Loader	2.5	hrs	104.00	260.00
			12/10 Loader	9.0	hrs	104.00	936.00
			Transport WKGN	4	lds	310.00	1,240.00
			Disposal - Solid	71	cy.	22.50	1,597.50
			12/11 Loader	9.0	hrs	104.00	936.00
			Transport WKGN	9	lds	310.00	2,790.00
			Disposal - Solid	144	cy.	22.50	3,240.00
			Disposal - Liquid	4500	gal	0.16	720.00
			12/12 Loader	9.0	hrs	104.00	936.00
			Transport WKGN	8	lds	310.00	2,480.00
			Disposal - Solid	144	cy.	22.50	3,240.00
1010			SUB TOTAL				\$20,209.50

TO INSURE PROMPT AND ACCURATE CREDITING OF YOUR
ACCOUNT INCLUDE WITH YOUR REMITTANCE

① CUSTOMER NUMBER ② INVOICE NUMBER

PLEASE REMIT TO: BFI

P. O. BOX 200,070 HOUSTON, TEXAS 77216

OK David
12-14-79

TOTAL
\$ 20,209.50
AMOUNT DUE

ORIGINAL INVOICE

198

**Browning-Ferris Industries**

CHEMICAL SERVICES, INC.

SERVICE RECEIPT AND LOG

Service Receipt No. _____ P. O. No. _____

Plant Hannah Division Lemont Terminal Bldg. No. _____Equipment _____ Job Scope MIX + LOAD CONTAMINATED MATL.

BFI-Chemical Services Div., Inc.

Job No. _____ Req. No. _____ J. O. or Acct. No. _____

EQUIPMENT

TRUCK NO.	TYPE	ARRIVAL		DEPARTURE		REMARKS
		DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	
101	Load R.	SUN 11/1				2.5 HRS. 11:00 AM - 1:30 PM
102	Load R.	MON 11/2	11:00			11:00 AM - 1:00 PM
103	Load R.	TUE 11/3	11:00			11:00 AM - 1:00 PM

LABOR

NO. & CLASSIFICATION	ARRIVAL		DEPARTURE		REMARKS
	DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	

CHEMICALS

NAME	QUANTITY	REMARKS

MISCELLANEOUS

(Hoses, Rental Equip., Extra Pumps, Hauling Off Spent Chemicals, Etc.)

DESCRIPTION	QUANTITY	REMARKS

PREPARE IN TRIPLICATE: 1st & 2nd Copy - Return With Job Log
AND SIGN 3rd Copy - Give to Customer

Form 200-A

OPERATOR

CUSTOMER REPRESENTATIVE

CHEMICAL SERVICES, INC.		JOB NUMBER <u>375</u>	
CUSTOMER <u>HANNAH INLAND WATERWAYS</u>		DATE <u>11-08</u> 19 <u>79</u>	
ADDRESS _____		DRIVER <u>CHICKAT</u>	
CITY & STATE <u>LEMONT, ILL</u>		UNIT NO. <u>7170-687</u>	
DESCRIPTION OF WORK		TIME RECORD	
LIQUID WASTE DESCRIPTION <u>MISC. TANK</u>		LOADING TIME	
<u>11/8/79</u>		TIME START <u>07:15</u> AM	
DISPOSAL PERMIT NUMBER <u>1</u>		ARRIVAL TIME <u>07:30</u> AM	
REMARKS _____		DELAY TIME _____ HOURS	
_____		DEPARTURE TIME <u>13:15</u> PM	
_____		TOTAL HOURS <u>6 1/2</u>	
_____		HOLD OVER TIME	
_____		HOLD OVER <input type="checkbox"/> YES <input type="checkbox"/> NO	
CUSTOMER INFORMATION		ARRIVED AT YARD _____ AM	
QUANTITY LOADED <u>1.5 TON</u>		TIME CONTINUED ON W.O. NO. _____	
CUSTOMER DELAYS _____		DATE <u>11-08</u> 19 <u>79</u>	
_____		DRIVERS SIGNATURE _____	
CUSTOMERS SIGNATURE _____		DEPARTURE TIME _____ AM	
BREAKDOWN TIME		UNLOADING TIME	
BREAKDOWN DELAY _____		ARRIVAL TIME <u>07:30</u> AM	
_____		BEGIN UNLOADING <u>07:30</u> AM	
_____		DELAY TIME _____ HOURS	
_____		COMPLETE UNLOADING <u>08:00</u> AM	
_____		DEPARTURE TIME <u>08:00</u> AM	
UNLOADING INFORMATION		TOTAL TIME _____ HOURS	
NAME OF DISPOSAL SITE <u>WEST</u>		BREAKDOWN TIME	
<u>CHICKAT</u>		OUT OF SERVICE _____ AM	
THIS MATERIAL HAS BEEN RECEIVED AND WILL BE DISPOSED OF IN ACCORDANCE WITH:		RETURNED SERVICE _____ AM	
PERMIT NUMBER _____		TOTAL TIME _____ HOURS	
ISSUED BY _____		COMPLETION TIME	
UNLOADING POINT DELAYS _____		TIME CONTINUED ON W.O. NO. _____	
_____		RETURNED TO YARD _____ AM	
_____		ARRIVAL TIME _____ AM	
_____		TOTAL HOURS _____	
_____		DRIVERS SIGNATURE <u>CHICKAT</u>	
DISPOSAL SITE SIGNATURE <u>M. F. F.</u>			



analytical report

analysis no.: 63066

21 November 1979

• BROWNING-FERRIS IND.
P. O. Box A
Lemont, Il. 60439

Attn: Mr. George Zurowski

cc: Bob Piet; Schaumburg/Browning-Ferris; Houston

date taken:

date received:

date analyzed:

11/13/79 1535

11/14/79

SAMPLE DESCRIPTION: Hannah - Tank Truck

Alkalinity	0.80	%	Mercury	0.07	ppm
Arsenic	0.36	ppm	Nickel	34.	ppm
Cadmium	1.52	ppm	pH	12.35	@ 25° C
Chromium, tot.	14.9	ppm	Solids, total	29.97	%
Copper	16.5	ppm	Zinc	40.3	ppm
Cyanide, total	0.22	ppm	Flash Point	185° F	Flash Poi
Lead	80.1	ppm			

Stan Javorski





analytical report

analysis no.: 63067

21 November 1979

• BROWNING-FERRIS IND.
P. O. Box A
Lemont, Il. 60439

Attn: Mr. George Zurowski

cc: Bob Piet; Schaumburg/Browning-Ferris; Houston

date taken:

date received:

date analyzed:

11/13/79 1535

11/14/79

SAMPLE DESCRIPTION: Hannah - East Pond Sludge

Alkalinity	2.06	%	Mercury	0.49	ppm
Arsenic	2.78	ppm	Nickel	64.	ppm
Cadmium	3.96	ppm	pH	12.50	@ 25° C
Chromium, tot.	32.2	ppm	Solids, total	35.45	%
Copper	37.4	ppm	Zinc	93.7	ppm
Cyanide, total	9.58	ppm	Flash Point	110° F	Flash Poi
Lead	144.	ppm			

Stan Jowers





analytical report

analysis no.: 63068

21 November 1979

BROWNING-FERRIS IND.
P. O. Box A
Lemont, Il. 60439

Attn: Mr. George Zurowski

cc: Bob Piet; Schaumburg/Browning-Ferris; Houston

date taken:

date received:

date analyzed:

11/13/79 1535

11/14/79

SAMPLE DESCRIPTION: Hannah - Sump Pit

Alkalinity	1.31	%	Mercury	0.01	ppm
Arsenic	0.07	ppm	Nickel	1.2	ppm
Cadmium	0.18	ppm	pH	9.70	@ 25° C
Chromium, tot.	0.10	ppm	Solids, total	3.31	%
Copper	0.78	ppm	Zinc	1.55	ppm
Cyanide, total	1.39	ppm	Flash Point	212° F	Flash Point
Lead	18.8	ppm			

Stefanowich



BROWNING-FERRIS INDUSTRIES
CHEMICAL SERVICES, INC.
300 FANNIN BANK BUILDING
HOUSTON, TEXAS 77030

HANNAH INLAND WATERWAYS 536 00 39190-4 04/16/80
CONSTRUCTORS
RT 83 & ROUTE 171
LEMONI IL 60439

GENTLEMEN:

BELOW IS A DETAIL OF ALL INVOICES OPEN ON YOUR ACCOUNT WHICH
HAD NOT BEEN PAID ON THE FIRST OF THE MONTH. SOME OF THESE
INVOICES EXCEED THE NET 30 DAY TERMS WHICH YOU AGREED TO IN
CONSIDERATION FOR THE EXTENSION OF CREDIT.

IF THERE IS ANY PROBLEM WHICH HAS HELD UP PAYMENT THAT WE CAN
HELP WITH, PLEASE LET US KNOW. YOUR REMITTANCE OR AN EXPLANATION
OF THE PROBLEM HOLDING UP PAYMENT WILL BE APPRECIATED. YOU
MAY CONTACT US AT 713-790-1611 OR P.O. BOX 3151, HOUSTON, TX.,
77001.

- - - - - I N V O I C E - - - - -

INV#-PO#	DATE	AMOUNT	PAY/CR/ADJ	NET
6284	01/17/80	7,033.00	.00	7,033.00
	VERBAL-DA			

=====

TOTAL NOW DUE 7,033.00

SINCERELY,

M. K. STALDER
CREDIT DEPARTMENT



Browning-Ferris Industries
CHEMICAL SERVICES, INC.

SNAP-OUT SEND WHITE AND PINK COPIES WITH CARBON
& TYPEWRITER OR HAND USE

Rapid Memo 98-132 T

APID MEMO

M.K. STALDER
Credit Manager

P.O. Box 3151 / Houston, Texas 77001 / (713) 790-1611

FROM

M. K. Stalder

BFI

now paid?

SUBJECT:

Invoice #6284 dated 1-17-80

DATE

4-1-80

MESSAGE

Mr. Stoechert, I had talked with your accounts payable department last Friday in reference to the above subject invoice being past due. They suggested I send a copy to you. I need to find out if there is some reason this invoice has not been paid. Any help you can give in getting this paid as soon as possible will be very much appreciated.

SIGNED

[Signature]

REPLY

DATE

SIGNED

FORM 98-132 TRIP
A SOORUM & PLEASER PRODUCT

THIS COPY FOR PERSON ADDRESSED



Browning-Ferris Industries

CHEMICAL SERVICES, INC.
P. O. Box 14
Lemont, IL 60439
PHONE (312) 257-7707

21

6-13

Hannah Inland Waterways Transport
Route 83 and Route 171
Lemont, IL 60439

Attn: David Updegraff

SLSM	JOB		
05	0375	Verbal-Dave Updegraff	
14-15	16-19		
CUST NO		INV DATE	
29150-4		01-17-80	
20 26		27 28 29 30 31 32	Net 30

Onsite Clean-Up of Barge Cleaning Wastes.

DEPT 33 36	CHEM 37 40	TAX 67 70		QTY 41 47	UNIT 48 50	UNIT PRICE 51 56	AMOUNT 57 66	DISCOUNT 57 66
			12-27 Loader Transport Disposal	8.5 5 90	hrs ld. yd.	104.00 310.00 22.50	\$ 884.00 1550.00 2025.00	
			12-28 Loader Transport Disposal	8.5 2 36	hrs ld. yd.	104.00 310.00 22.50	884.00 620.00 810.00	
			12-29 thru 1-3 Loader Standby	2.5	Hrs	104.00	260.00	
1010			... SUB TOTAL ...				7033.00	

RECEIVED
JAN 17 1980
ACCOUNTING

DO NOT KEY PUNCH SHADED
AREAS

TOTAL

7,033.00

20706



Browning-Ferris Industries

CHEMICAL SERVICES, INC.
P. O. Box A
Lemont, IL 60439
PHONE (312) 257-7707

25006284

NUMBER

INVOICE
TO

Hannah Inland Waterways Transport
Route 83 and Route 171
Lemont, IL 60439

Attn: David Updegraff

BLM	JOB	PURCHASE ORDER	
05	0375	Verbal-Dave Updegraff	
NO.	NO.	REQUISITION NO.	
CUSTOMER	INVOICE DATE	TERMS	
NEW	01-17-80	Net 30	
NUMBER	MO DAY YR		

GENERAL DESCRIPTION OF WORK PERFORMED

Onsite Clean-Up of Barge Cleaning Wastes.

DEPT.	CHEM CODE	TAX CODE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1010			12-27 Loader	8.5	hrs	104.00	\$ 884.00
			Transport	5	ld.	310.00	1550.00
			Disposal	90	yd.	22.50	2025.00
			12-28 Loader	8.5	hrs	104.00	884.00
			Transport	2	ld.	310.00	620.00
			Disposal	36	yd.	22.50	810.00
			12-29 thru 1-3				
			Loader Standby	2.5	Hrs	104.00	260.00
			SUB TOTAL				7033.00

H/63

IF YOU'RE NOT SATISFIED WITH
THIS INVOICE, PLEASE CONTACT US
AT 312-257-7707.

OK
2-4-80

TO INSURE PROMPT AND ACCURATE CREDITING OF YOUR
ACCOUNT INCLUDE WITH YOUR REMITTANCE

① CUSTOMER NUMBER ② INVOICE NUMBER

PLEASE REMIT TO: BFI

P. O. BOX 200,070 HOUSTON, TEXAS 77216

TOTAL
\$ 7,033.00
AMOUNT DUE

ORIGINAL INVOICE

208

VOUCHER NO

CHECK NO.

DATE PAID.

MAR 8 1980

ACCT. NO.

DESCRIPTION

DEBIT

CREDIT

4131.10

15/63

7	0	3	3	0
---	---	---	---	---

TOTAL

DISCOUNT

2

NET

EXPLANATION:

AUDITED

APPROVED

ENTERED

DATE
ENTERED



Browning-Ferris Industries

25006216

NUMBER

INVOICE
TOHannah Inland Waterways Transport
Route 83 & Route 171
Lemont, IL 60439

ATTN: Dave Updegraff

SLSM	JOB	PURCHASE ORDER	
11	0375	Verbal per D. Updegraff	
NO	NO	REQUISITION NO.	
CUSTOMER		INVOICE DATE	TERMS
NEW		12/27/79	Net 30
NUMBER		MO DAY YR	

GENERAL DESCRIPTION OF WORK PERFORMED

On-Site Clean Up.

DEPT.	CHEM CODE	TAX CODE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1010			12/19 End Loader	8.5	hrs	104.00	884.00 ✓
			Transport	4	lds	310.00	1,240.00 ✓
			Disposal	72	yds	22.50	1,620.00 ✓
			12/20 End Loader	8.0	hrs	104.00	832.00 ✓
			Transport	6	lds	310.00	1,860.00 ✓
			Disposal	108	yds	22.50	2,430.00 ✓
			12/21 End Loader	7.0	hrs	104.00	728.00 ✓
			Transport	5	lds	310.00	1,550.00 ✓
			Disposal	90	yds	22.50	2,025.00 ✓
			12/26 End Loader	5.5	hrs	104.00	572.00 ✓
			Transport	2	lds	310.00	620.00 ✓
			Disposal	36	yds	22.50	810.00 ✓
			SUB TOTAL				\$15,171.00 ✓
			<div>Dec 1979 UR same as previous Job #</div>				

TO INSURE PROMPT AND ACCURATE CREDITING OF YOUR
ACCOUNT INCLUDE WITH YOUR REMITTANCE

① CUSTOMER NUMBER

② INVOICE NUMBER

PLEASE REMIT TO: BFI

P.O. BOX 200,070 HOUSTON, TEXAS 77095

TOTAL

\$ 15,171.00

AMOUNT DUE

ORIGINAL INVOICE

210



SERVICE RECEIPT AND LOG

Service Receipt No. _____ P. O. No. _____

Plant HERNIMH Division Leitch Terminal Bldg. No.

Equipment Loader Job Scope SHOULDER-BLANKET

BFI-Chemical Services Div., Inc.

Job No. 1800 Req. No. _____ J. O. or Acct. No. _____

EQUIPMENT

TRUCK NO.	TYPE	ARRIVAL		DEPARTURE		REMARKS
		DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	

LABOR

NO. & CLASSIFICATION	ARRIVAL		DEPARTURE		REMARKS
	DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	

CHEMICALS

NAME	QUANTITY	REMARKS

MISCELLANEOUS

(Hoses, Rental Equip., Extra Pumps, Hauling Off Spent Chemicals, Etc.)

DESCRIPTION	QUANTITY	REMARKS

PREPARE IN TRIPLICATE: 1st & 2nd Copy - Return With Job Log
AND SIGN 3rd Copy - Give to Customer

**Browning-Ferris Industries**

CHEMICAL SERVICES, INC.

SERVICE RECEIPT AND LOG

Service Receipt No. _____ P. O. No. _____

Plant HANNATH Division LEONANT TERNAL Bldg. No. _____Equipment LOADER Job Scope _____

BFI-Chemical Services Div., Inc.

Job No. 1575

Req. No. _____ J. O. or Acct. No. _____

EQUIPMENT

TRUCK NO.	TYPE	ARRIVAL		DEPARTURE		REMARKS
		DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	
11	1	6-30	7:11	6-30		1 HR LUNCH
						Henry Gable 12-21-79
101	21	6-30	7:11	12:00		
						Henry Gable 12-21-79

LABOR

NO. & CLASSIFICATION	ARRIVAL		DEPARTURE		REMARKS
	DATE	TIME (A.M. or P.M.)	DATE	TIME (A.M. or P.M.)	

CHEMICALS

NAME	QUANTITY	REMARKS

MISCELLANEOUS

(Hoses, Rental Equip., Extra Pumps, Hauling Off Spent Chemicals, Etc.)

DESCRIPTION	QUANTITY	REMARKS

PREPARE IN TRIPLICATE: 1st & 2nd Copy - Return With Job Log
AND SIGN 3rd Copy - Give to Customer

Form 200-A

OPERATOR

CUSTOMER REPRESENTATIVE

VOUCHER NO. 12.252
CHECK NO. 15062
DATE PAID 1-2-80

DATE	ACCT. NO.	DESCRIPTION		DEBIT	CREDIT
	4131.10	N163		15171 ⁰⁰	
		TOTAL		15171 ⁰⁰	
		DISCOUNT %			
		NET			

EXPLANATION:

AUDITED	APPROVED	ENTERED	DATE ENTERED

RESPONSE NO. 11

CONVENTIONAL PORTFOLIO POLICY®



FIREMAN'S FUND INSURANCE COMPANIES
MAILING ADDRESS: SAN FRANCISCO CALIFORNIA

COVERAGE IS PROVIDED IN THE FOLLOWING COMPANY,
A STOCK COMPANY.

07. National Surety Corp.

DECLARATIONS

POLICY NUMBER 2-64 -MXP-457 73 65

1. NAMED INSURED AND ADDRESS (NO., STREET, TOWN, COUNTY, STATE, ZIP)

Hannah Marine Corporation
361 Frontage Rd.
Burr Ridge, IL 60636

3. INTEREST OF NAMED INSURED IN INSURED PREMISES:

☐ OWNER ☐ GENERAL LESSEE ☐ TENANT

THE NAMED INSURED IS:

☐ INDIVIDUAL ☐ PARTNERSHIP ☒ CORPORATION

2. POLICY PERIOD

7-14-82

6-9-85

INCEPTION

EXPIRATION

12 01 A.M. STANDARD TIME AT THE ADDRESS OF THE NAMED INSURED AS STATED HEREIN

4. INSURANCE IS PROVIDED ONLY UNDER THOSE SECTIONS, AGAINST THOSE PERILS, AND FOR THOSE COVERAGES AND KINDS OF PROPERTY FOR WHICH A SPECIFIC AMOUNT OR LIMIT OF LIABILITY IS SHOWN BELOW OR IN SCHEDULES OR COVERAGE PARTS INCORPORATED HEREIN, SUBJECT TO ALL THE TERMS OF THE POLICY AND ALL FORMS AND ENDORSEMENTS MADE A PART HEREOF.

PROPERTY COVERAGE

ITEM NO.	AMOUNT	PERCENT OF COINSURANCE APPLICABLE	PERILS (SEE CODES BELOW)	DESCRIPTION AND LOCATION OF PROPERTY COVERED
				As Per Attached Property Gard Forms 140382 and 140386
PERIL CODES	1. FIRE AND LIGHTNING	2. VANDALISM AND MALICIOUS MISCHIEF	3. AOP	INSERTION OF CODE NUMBER MEANS A SPECIFIC PREMIUM CHARGE HAS BEEN MADE FOR THAT PERIL OR COVERAGE.
	2. EXTENDED COVERAGE	4. SPRINKLER LEAKAGE	5.	
SUBJECT TO FORMS AND ENDORSEMENT NO. (S) 140382(5/76)Rev., 140381(10/74)Rev., 140391(5/77)Rev., 140506(10/75), 140402(1/77), 180132(5/76), CF1506(5/77), 140395(4/76)Rev., 140386(11/77).				

GENERAL LIABILITY—AUTOMOBILE COVERAGE

FORM NUMBER	SPECIAL POLICY PROVISIONS—NAME OF COVERAGE PART(S) INCORPORATED HEREIN
140067	GENERAL LIABILITY/AUTOMOBILE COVERAGE—SPECIAL POLICY PROVISIONS
105040	Comprehensive General Liability Insurance
105032	Personal Injury Liability Insurance
105033	Premises Medical Payments Insurance
140583	Business Auto Policy
ENDORSEMENTS ATTACHED 5975(4/78)pgs 1,2&3, 5985(7/80)-IL., 140624, 5985(1/79)-MI., 140808 101051, 180162, 105053, 105029, 105160, 180009, 105178	

OPTIONAL COVERAGE

LIMITS OF LIABILITY	COVERAGES FORM NO.(S) AND DESCRIPTION(S)
	140038(4/73), 135113(6/80)

TOTAL ADVANCE PREMIUM	IF PAID IN ANNUAL INSTALLMENTS, PREMIUMS, PREMIUM DUE.		
\$	\$ 25,802.	AT INCEPTION \$ TBD	1ST ANNIVERSARY \$ TBD 2ND ANNIVERSARY
MORTGAGEE (NAME AND ADDRESS)			
COUNTERSIGNATURE DATE 9/28/82 MSXX		ROLLINS BURDICK HUNTER CO. COUNTERSIGNATURE OF AUTHORIZED AGENT BY <i>[Signature]</i>	

COMMERCIAL LIABILITY COVERAGE

REAL PROPERTY

POLICY COVERAGE**GENERAL LIABILITY**

Comprehensive General Liability Insurance

These Declarations Are Issued In
Conjunction With And Are Part Of
Policy Form GL 00 02 01 73.

IF THE FOLLOWING INFORMATION IS NOT COMPLETE, REFER TO THE APPROPRIATE DECLARATIONS ATTACHED TO THE POLICY.

INSURED Hannah Marine Corporation	POLICY NUMBER MXP 457 73 65	SEQUENTIAL NO. 2
PRODUCER Rollins Burdick Hunter of Il	EFFECTIVE DATE 7-14-82	

DECLARATIONS

INSURANCE IS PROVIDED ONLY FOR THOSE COVERAGES FOR WHICH LIMITS OF LIABILITY ARE STATED IN THE PLACE PROVIDED IN THESE DECLARATIONS.

COVERAGES**LIMITS OF LIABILITY****COMPREHENSIVE GENERAL LIABILITY COVERAGE PART****EACH OCCURRENCE****AGGREGATE**

BODILY INJURY LIABILITY

\$,000 \$,000

PROPERTY DAMAGE LIABILITY

\$,000 \$,000

COMBINED BODILY INJURY AND
PROPERTY DAMAGE LIABILITY

\$ 500 ,000 \$ 500 ,000

THE AUDIT PERIOD SHALL BE: ☐ MONTHLY☐ QUARTERLY☒ ANNUALLY

This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY

Myron De Bais
PRESIDENT

11XCE 216

STOCK NO. 5951 (C)-CGL-11-82

COMMERCIAL COVERAGE

POLICY COVERAGE

GENERAL LIABILITY COVERAGE

Comprehensive General Liability Insurance

GL 00 02 01 73

These policy provisions, together with all applicable terms, conditions and exclusions of the policy and the coverage parts and endorsement made a part hereof by designation in the Declarations, complete the Liability Coverage of this policy.

COVERAGE PART — COMPREHENSIVE GENERAL LIABILITY INSURANCE

1. INSURING AGREEMENT

The Company will pay on behalf of the insured all sums which the insured shall become legally obligated to pay as damages because of bodily injury or property damage to which this insurance applies, caused by an occurrence, and the Company shall have the right and duty to defend any suit against the insured seeking damages on account of such bodily injury or property damage, even if any of the allegations of the suit are groundless, false or fraudulent, and may make such investigation and settlement of any claim or suit as it deems expedient, but the Company shall not be obligated to pay any claim or judgment or to defend any suit after the applicable limit of the Company's liability has been exhausted by payment of judgments or settlements.

2. EXCLUSIONS

This insurance does not apply:

(a) to liability assumed by the insured under any contract or agreement except an incidental contract; but this exclusion does not apply to a warranty of fitness or quality of the named insured's products or a warranty that work performed by or on behalf of the named insured will be done in a workmanlike manner;

(b) to bodily injury or property damage arising out of the ownership, maintenance, operation, use, loading or unloading of (1) any automobile or aircraft owned or operated by or rented or loaned to any insured, or (2) any other automobile or aircraft operated by any person in the course of his employment by any insured; but this exclusion does not apply to the parking of an automobile on premises owned by, rented to or controlled by the named insured or the ways immediately adjoining, if such automobile is not owned by or rented or loaned to any insured;

(c) to bodily injury or property damage arising out of (1) the ownership, maintenance, operation, use, loading or unloading of any mobile equipment while being used in any prearranged or organized racing, speed or demolition contest or in any stunting activity or in practice or preparation for any such contest or activity or (2) the operation or use of any snowmobile or trailer designed for use therewith;

(d) to bodily injury or property damage arising out of and in the course of the transportation of mobile equipment by an automobile owned or operated by or rented or loaned to any insured;

(e) to bodily injury or property damage arising out of the ownership, maintenance, operation, use, loading or unloading of (1) any watercraft owned or operated by or rented or loaned to any insured, or (2) any other watercraft operated by any person in the course of his employment by any insured; but this exclusion does not apply to watercraft while ashore on premises owned by, rented to or controlled by the named insured;

(f) to bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental;

(g) to bodily injury or property damage due to war, whether or not declared, civil war, insurrection, rebellion or revolution or to an act or condition incident to any of the foregoing, with respect to (1) liability assumed by insured under an incidental contract, or (2) expenses for first aid under the Supplementary Payments provision;

(h) to bodily injury or property damage for which the insured or his indemnitee may be held liable (1) as a person or organization engaged in the business of manufacturing, distributing, selling or serving alcoholic beverages, or (2) if not so engaged, as an owner or lessor of premises used for such purposes, if such liability is imposed (i) by, or because of the violation of, any statute, ordinance or regulation pertaining to the sale, gift, distribution or use of any alcoholic beverage, or

(ii) by reason of the selling, serving or giving of any alcoholic beverage to a minor or to a person under the influence of alcohol or which causes or contributes to the intoxication of any person; but part (ii) of this exclusion does not apply with respect to liability of the insured or his indemnitee as an owner or lessor described in (2) above;

This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY

PRESIDENT

(i) to any obligation for which the insured or any carrier as his insurer may be held liable under any workers' compensation, unemployment compensation or disability benefits law, or under any similar law;

(j) to bodily injury to any employee of the insured arising out of and in the course of his employment by the insured or to any obligation of the insured to indemnify another because of damages arising out of such injury; but this exclusion does not apply to liability assumed by the insured under an incidental contract;

(k) to property damage to (1) property owned or occupied by or rented to the insured, (2) property used by the insured, or (3) property in the care, custody or control of the insured or as to which the insured is for any purpose exercising physical control; but parts (2) and (3) of this exclusion do not apply with respect to liability under a written sidetrack agreement and part (3) of this exclusion does not apply with respect to property damage (other than to elevators) arising out of the use of an elevator at premises owned by, rented to or controlled by the named insured;

(l) to property damage to premises alienated by the named insured arising out of such premises or any part thereof;

(m) to loss of use of tangible property which has not been physically injured or destroyed resulting from (1) a delay in or lack of performance by or on behalf of the named insured of any contract or agreement, or (2) the failure of the named insured's products or work performed by or on behalf of the named insured to meet the level of performance, quality, fitness or durability warranted or represented by the named insured; but this exclusion does not apply to loss of use of other tangible property resulting from the sudden and accidental physical injury to or destruction of the named insured's products or work performed by or on behalf of the named insured after such products or work have been put to use by any person or organization other than an insured;

(n) to property damage to the named insured's products arising out of such products or any part of such products;

(o) to property damage to work performed by or on behalf of the named insured arising out of the work or any portion thereof, or out of materials, parts or equipment furnished in connection therewith;

(p) to damages claimed for the withdrawal, inspection, repair, replacement, or loss of use to the named insured's products or work completed by or for the named insured or of any property of which such products or work form a part, if such products, work or property are withdrawn from the market or from use because of any known or suspected defect or deficiency therein.

3. PERSONS INSURED

Each of the following is an insured under this insurance to the extent set forth below:

(a) if the named insured is designated in the Declarations as an individual, the person so designated but only with respect to the conduct of a business of which he is the sole proprietor, and the spouse of the named insured with respect to the conduct of such a business;

(b) if the named insured is designated in the Declarations as a partnership or joint venture, the partnership or joint venture so designated and any partner or member thereof but only with respect to his liability as such;

(c) if the named insured is designated in the Declarations as other than an individual, partnership or joint venture, the organization so designated and any executive officer, director or stockholder thereof while acting within the scope of his duties as such;

(d) any person (other than an employee of the named insured) or organization while acting as real estate manager for the named insured; and

(e) with respect to the operation, for the purpose of locomotion upon a public highway, of mobile equipment registered under any other motor vehicle registration law, (i) an employee of the named insured while operating any such equipment in the course of his employment, and (ii) any other person while operating with the permission of the named insured any such equipment registered in the name of the named insured and any person or organization legally responsible for such operation, but only if there is no other valid and collectible insurance available, either on a primary or excess basis, to such person or organization;

provided that no person or organization shall be an insured under this paragraph (e) with respect to: (1) bodily injury to any fellow employee of such person injured in the course of his employment; or (2) property damage to property owned by, rented to, in charge of or occupied by the named insured or the employer of any person described in subparagraph (ii).

This insurance does not apply to bodily injury or property damage arising out of the conduct of any partnership or joint venture of which the insured is a partner or member and which is not designated in this policy as a named insured.

4. LIMITS OF LIABILITY

Regardless of the number of (1) insureds under this policy, (2) persons or organizations who sustain bodily injury or property damage, (3) claims made or suits brought on account of bodily injury or property damage or (4) units of mobile equipment to which this policy applies, the Company's liability is limited as follows:

(a) Separate limits of liability for bodily injury liability and property damage liability.

The total liability of the Company for all damages, including damages for care and loss of services, because of bodily injury sustained by one or more persons as the result of any one occurrence shall not exceed the limit of bodily injury liability stated in the Declarations as applicable to "each occurrence."

Subject to the above provision respecting "each occurrence," the total liability of the Company for all damages because of (1) all bodily injury included within the completed operations hazard and (2) all bodily injury included within the products hazard shall not exceed the limit of bodily injury liability stated in the Declarations as "aggregate."

The total liability of the Company for all damages because of all property damage sustained by one or more persons or organizations as the result of any one occurrence shall not exceed the limit of property damage liability stated in the Declarations as applicable to "each occurrence."

Subject to the above provision respecting "each occurrence," the total liability of the Company for all damages because of all property damage to which this coverage applies and described in any of the numbered subparagraphs below shall not exceed the limit of property damage liability stated in the Declarations as "aggregate": (1) all property damage arising out of premises or operations rated on a remuneration basis or contractor's equipment rated on a receipts basis, including property damage for which liability is assumed under any incidental contract relating to such premises or operations, but excluding property damage included in subparagraph (2) below; (2) all property damage arising out of and occurring in the course of operations performed for the named insured by independent contractors and general supervision thereof by the named insured, including any such property damage for which liability is assumed under any incidental contract relating to such operations, but this subparagraph (2) does not include property damage arising out of maintenance or repairs at premises owned by or rented to the named insured or structural alterations at such premises which do not involve changing the size of or moving buildings or other structures; (3) all property damage included within the products hazard and all property damage included within the completed operations hazard.

Such aggregate limit shall apply separately to the property damage described in subparagraphs (1), (2) and (3) above, and under subparagraphs (1) and (2), separately with respect to each project away from premises owned by or rented to the named insured.

(b) Combined single limit of liability for bodily injury and property damage liability.

The total liability of the Company for all damages under all bodily injury liability and property damage liability coverages of this policy because of bodily injury or property damage sustained by one or more persons or organizations as a result of any one occurrence shall not exceed the limit of liability stated in the Declarations for "each occurrence."

Subject to the above provision respecting "each occurrence," the total liability of the Company for all damages arising out of the products hazard and completed operations hazard shall not exceed the limits of liability stated in the Declarations as "aggregate."

Subject to the above provision respecting "each occurrence," the total liability of the Company for all damages because of all property damage to which the policy applies

(i) arising out of premises or operations rated on a remuneration basis or contractors equipment rated on a receipts basis, including liability assumed under any inciden-

tal contract relating to such premises or operations or

(ii) arising out of and occurring in the course of operations, other than maintenance or repairs at premises owned by or rented to the named insured or structural alterations at such premises which do not involve changing the size of or moving buildings or other structures, performed for the named insured by independent contractors and general supervision thereof by the named insured including liability assumed under any incidental contract relating to such operations

shall not exceed the limit of liability stated in the Declarations as "aggregate." Said aggregate limit of liability shall apply separately to (i) and (ii) and under each separately to each project away from premises owned by or rented to the named insured.

With respect to any occurrence for which notice of this policy is given in lieu of security or when this policy is certified as proof of financial responsibility for the future under the provisions of the motor vehicle financial responsibility law of any state, province or other territorial jurisdiction, the stated limits of liability as respects each occurrence shall be applied to provide the separate limits of liability required by such law for bodily injury liability and property damage liability to the extent of the coverage required by such law, but the separate application of such limits shall not increase the total limit of the Company's liability.

For the purpose of determining the limit of the Company's liability under (a) or (b) above, all bodily injury and property damage arising out of continuous or repeated exposure to substantially the same general conditions shall be considered as arising out of one occurrence.

5. POLICY PERIOD; TERRITORY

This insurance applies only to bodily injury or property damage which occurs during the Policy Period within the policy territory.

6. When used as a premium basis:

"admissions" means the total number of persons, other than employees of the named insured, admitted to the event insured or to events conducted on the premises whether on paid admission tickets, complimentary tickets or passes;

"cost" means the total cost to the named insured with respect to operations performed for the named insured during the policy period by independent contractors of all work let or sub-let in connection with each specific project, including the cost of all labor, materials and equipment furnished, used or delivered for use in the execution of such work, whether furnished by the owner, contractor or subcontractor, including all fees, allowances, bonuses or commissions made, paid or due;

"receipts" means the gross amount of money charged by the named insured for such operations by the named insured or by others during the policy period as are rated on a receipts basis other than receipts from telecasting, broadcasting or motion pictures, and includes taxes, other than taxes which the named insured collects as a separate

item and remits directly to a governmental division;

"remuneration" means the entire remuneration earned during the policy period by proprietors and by all employees of the named insured, other than chauffeurs (except operators of mobile equipment) and aircraft pilots and co-pilots, subject to any overtime earnings or limitation of remuneration rule applicable in accordance with the manuals in use by the Company;

"sales" means the gross amount of money charged by the named insured or by others trading under his name for all goods and products sold or distributed during the policy period and charged during the policy period for installation, servicing or repair, and includes taxes, other than taxes which the named insured and such others collect as a separate item and remit directly to a governmental division.

POLICY NUMBER 2 64 MXX 20079578
PREV. POLICY NOS. 2 64 MXP 04577365

Coverage for sections
other than WORKERS'
COMPENSATION is provided
in the following Company:
NATIONAL SURETY
CORPORATION
CHICAGO, IL
A STOCK INSURANCE CO. (07)



PORTFOLIO POLICY (R)

GENERAL DECLARATIONS

Named Insured and Mailing Address

HANNAH MARINE CORP.

361 FRONTAGE RD.

BURR RIDGE

IL 60636

Producer Name and Address

ROLLINS, BURDICK, HUNTER OF ILLINOIS

The Named Insured is a(n) CORPORATION

Business or Operations of the Named Insured: CLEANING & REPAIRING OF BARGES

Insurance is provided only under each coverage of this policy or the WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY POLICY listed below, subject otherwise to all the terms and conditions of the General Provisions and of said Coverage(s) or policy having reference thereto.

PROPERTY COVERAGES
GENERAL LIABILITY COVERAGES
AUTO INSURANCE COVERAGES

Policy Period (For above coverages)

INCEPTION DATE 06-09-85

EXPIRATION DATE 06-09-86

Beginning and Ending at 12:01 A.M., Standard Time
at the address of the insured

It is agreed and understood that the BUSINESS AUTO POLICY, GARAGE POLICY AND TRUCKER'S POLICY are self contained policies forming part of the Policy identified above. Premium is included in the Premium Summary below.

DECLARATIONS CONTINUED ON PAGE 2

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☒ INSURED'S COPY

☐ BRANCH COPY

ARMED INSURED
HANNAH MARINE CORP.

FORTFOLIO POLICY (R)



GENERAL LIABILITY DECLARATIONS

INSURANCE IS PROVIDED ONLY FOR THOSE COVERAGES, LIMITS OF LIABILITY AND ENDORSEMENTS SHOWN BELOW.

GENERAL LIABILITY COVERAGES

LIMITS OF LIABILITY

COMPREHENSIVE GENERAL LIABILITY COVERAGE PART

COMBINED BODILY INJURY AND
PROPERTY DAMAGE LIABILITY

\$1,000,000 EACH OCCURRENCE
\$1,000,000 AGGREGATE

PREMISES MEDICAL PAYMENTS COVERAGE PART

\$2,000 EACH PERSON
\$10,000 EACH ACCIDENT

GENERAL LIABILITY ENDORSEMENT(S)

PERSONAL INJURY LIABILITY INSURANCE (105032 07-83)

LIMIT OF LIABILITY \$1,000,000 AGGREGATE
INSURED'S PARTICIPATION 0.0 PERCENT

THE INSURANCE AFFORDED IS ONLY WITH RESPECT TO PERSONAL INJURY ARISING OUT OF AN OFFENSE INCLUDED WITHIN THE GROUPS OF OFFENSES SHOWN BELOW:

- A. FALSE ARREST, DETENTION OR IMPRISONMENT, OR MALICIOUS PROSECUTION
- B. LIBEL, SLANDER, DEFAMATION OR VIOLATION OF RIGHT OF PRIVACY
- C. WRONGFUL ENTRY OR EVICTION OR OTHER INVASION OF RIGHT OF PRIVATE OCCUPANCY

EXCLUSION (COMPLETED OPERATIONS HAZARD AND PRODUCTS HAZARD) (GL 21 04 07 66)

AMENDATORY ENDORSEMENT - ADDITIONAL DEFINITION (GL 00 19 07 78)

AMENDATORY ENDORSEMENT (GL 00 32 04 84)

OTHER GENERAL LIABILITY ENDORSEMENTS

001 HOST LIQUOR LIABILITY
120009

002 POLLUTUIN EXCLUSION
GL 21 33 10 81

DECLARATIONS CONTINUED ON PAGE 2

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COMMERCIAL COVERAGE.

POLICY AMENDMENT

Hannan Marine Corporation, etal
Eff: 6/9/86

GENERAL LIABILITY

Pollution Exclusion

GL 21 33 02 85

Producer: Rollins Burdick Hunter of IL
2-64 MXX 80139960

This endorsement modifies such insurance as is afforded by the provisions of the policy relating to the following:

**COMPREHENSIVE GENERAL LIABILITY INSURANCE
CONTRACTUAL LIABILITY INSURANCE
MANUFACTURERS AND CONTRACTORS LIABILITY INSURANCE
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY INSURANCE
OWNERS, LANDLORDS AND TENANTS LIABILITY INSURANCE
SMP LIABILITY INSURANCE
STOREKEEPERS INSURANCE**

It is agreed that the exclusion relating to the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants is replaced by the following:

(1) to bodily injury or property damage arising out of the actual, alleged or threatened discharge, dispersal, release or escape of pollutants:

(a) at or from premises owned, rented or occupied by the named insured;

(b) at or from any site or location used by or for the named insured or others for the handling, storage, disposal, processing or treatment of waste;

(c) which are at any time transported, handled, stored, treated, disposed of, or processed as waste by or for the named insured or any person or organization for whom the named insured may be legally responsible; or

(d) at or from any site or location on which the named insured or any contractors or subcontractors working directly or indirectly on behalf of the named insured are performing operations:

(i) if the pollutants are brought on or to the site or location in connection with such operations; or

(ii) if the operations are to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize the pollutants.

(2) to any loss, cost or expense arising out of any governmental direction or request that the named insured test for, monitor, clean up, remove, contain, treat, detoxify or neutralize pollutants.

Pollutants means any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals and waste. Waste includes materials to be recycled, reconditioned or reclaimed.

Signature of Insured

This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY

William H. Johnson
PRESIDENT

11 XCL

STOCK NO. GL 21 33 02 85

223

COMMERCIAL COVERAGE

POLICY AMENDMENT

GENERAL LIABILITY

Pollution Exclusion

IL 09 28 06 85

This insurance modifies such insurance as is afforded by the provisions of the policy relating to the following:

**BUSINESSOWNERS POLICY
COMPREHENSIVE GENERAL LIABILITY INSURANCE
CONTRACTUAL LIABILITY INSURANCE
MANUFACTURERS AND CONTRACTORS LIABILITY INSURANCE
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY INSURANCE
OWNERS, LANDLORDS AND TENANTS LIABILITY INSURANCE
SMP LIABILITY INSURANCE
STOREKEEPERS INSURANCE**

It is agreed that the exclusion relating to the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants is replaced by the following:

(1) to bodily injury or property damage arising out of the actual, alleged or threatened discharge, dispersal, release or escape of pollutants:

(a) at or from premises owned, rented or occupied by the named insured;

(b) at or from any site or location used by or for the named insured or others for the handling, storage, disposal, processing or treatment of waste;

(c) which are at any time transported, handled, stored, treated, disposed of, or processed as waste by or for the named insured or any person or organization for whom the named insured may be legally responsible; or

(d) at or from any site or location on which the named insured or any contractors or subcontractors working directly or indirectly on behalf of the named insured are performing operations:

(i) if the pollutants are brought on or to the site or location in connection with such operations; or

(ii) if the operations are to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize the pollutants.

(2) to any loss, cost or expense arising out of any governmental direction or request that the named insured test for, monitor, clean up, remove, contain, treat, detoxify or neutralize pollutants.

Pollutants means any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals and waste. Waste includes materials to be recycled, reconditioned or reclaimed.

Signature of Insured

This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY

William H. Delaney

PRESIDENT

11 XCL

STOCK NO. IL 09 28 06 85

224

Sudden and accidental emissions of pollutants:
• at or from insured premises;

Broadenings
Non-sudden or gradual emissions of pollutants (other than waste):

POLICY NUMBER
2 64 MXX 80139960

PREV. POLICY NOS.
2 64 MXX 80079578

Coverage for sections other than WORKERS' COMPENSATION is provided in the following Company:
NATIONAL SURETY CORPORATION
CHICAGO, IL
A STOCK INSURANCE CO. (07)



PORTFOLIO POLICY (R)

GENERAL DECLARATIONS

Risk ID. 161/

Named Insured and Mailing Address

HANNAH MARINE CORPORATION, JAMES A. HANNAH, INC., 5801 ASSOCIATES. LTD., HANNAH BROTHERS PARTNERSHIP, 5101 HANNAH BARGE LIMITED PARTNERSHIP, DONALD C. HANNAH ENTERPRISES, HANNAH INTERNATIONAL MARINE CORPORATION, FLOWERSIDE ENTERPRISES LTD., KRISMARK ENTERPRISES CORPORATION, TAMPA TVG CORPORATION AND O.L. SCHMIDT BARGE LINES.

361 FRONTAGE RD.
BURR RIDGE IL 60621

Producer Name and Address

ROLLINS, BURDICK, HUNTER OF ILLINOIS

The Named Insured is a(n) CORPORATION

Business or Operations of the Named Insured: CLEANING & REPAIRING OF BARGES

Insurance is provided only under each coverage of this policy or the WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY POLICY listed below, subject otherwise to all the terms and conditions of the General Provisions and of said Coverage(s) or policy having reference thereto.

PROPERTY COVERAGES
GENERAL LIABILITY COVERAGES
AUTO INSURANCE COVERAGES
BOILER AND MACHINERY COVERAGE

Policy Period (For above coverages)
INCEPTION DATE 06-09-86
EXPIRATION DATE 06-09-87
Beginning and Ending at 12:01 A.M., Standard Time
at the address of the insured

It is agreed and understood that the BUSINESS AUTO POLICY, GARAGE POLICY AND TRUCKER'S POLICY are self contained policies forming part of the policy identified above. Premium is included in the Premium Summary below.

Rollins Burdick Hunter of Illinois, Inc.

By

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DECLARATIONS CONTINUED ON PAGE 2

☐ INSURED'S COPY

☐ BRANCH COPY

X

NAMED INSURED
HANNAH MARINE CORP.
PORTFOLIO POLICY (CR)



GENERAL LIABILITY DECLARATIONS

INSURANCE IS PROVIDED ONLY FOR THOSE COVERAGES, LIMITS OF LIABILITY AND ENDORSEMENTS SHOWN BELOW.

GENERAL LIABILITY COVERAGES

LIMITS OF LIABILITY

COMPREHENSIVE GENERAL LIABILITY COVERAGE PART

COMBINED BODILY INJURY AND
PROPERTY DAMAGE LIABILITY

\$1,000,000 EACH OCCURRENCE
\$1,000,000 AGGREGATE

PREMISES MEDICAL PAYMENTS COVERAGE PART

\$1,000 EACH PERSON
\$10,000 EACH ACCIDENT

GENERAL LIABILITY ENDORSEMENT(S)

PERSONAL INJURY LIABILITY INSURANCE (105032 07-83)

LIMIT OF LIABILITY \$1,000,000 AGGREGATE
INSURED'S PARTICIPATION 0.0 PERCENT

THE INSURANCE AFFORDED IS ONLY WITH RESPECT TO PERSONAL INJURY ARISING OUT OF AN OFFENSE INCLUDED WITHIN THE GROUPS OF OFFENSES SHOWN BELOW:

- A. FALSE ARREST, DETENTION OR IMPRISONMENT, OR MALICIOUS PROSECUTION
- B. LIBEL, SLANDER, DEFAMATION OR VIOLATION OF RIGHT OF PRIVACY
- C. WRONGFUL ENTRY OR EVICTION OR OTHER INVASION OF RIGHT OF PRIVATE OCCUPANCY

EXCLUSION (COMPLETED OPERATIONS HAZARD AND PRODUCTS HAZARD) (GL 21 04 07 66)

MANDATORY ENDORSEMENT - ADDITIONAL DEFINITION (GL 00 19 07 78)

MANDATORY ENDORSEMENT (GL 00 32 04 84)

POLLUTION EXCLUSION (IL 09 28 06 85)

OTHER GENERAL LIABILITY ENDORSEMENTS

002 POLLUTION EXCLUSION
GL 21 33 10 81

003 ADDITIONAL INSURED (OWNERS LESSEES)
GL 20 10 01 73

COMMERCIAL COVERAGE

GENERAL LIABILITY

Pollution Exclusion

POLICY AMENDMENT

GL 21 33 02 85

This endorsement modifies such insurance as is afforded by the provisions of the policy relating to the following:

**COMPREHENSIVE GENERAL LIABILITY INSURANCE
CONTRACTUAL LIABILITY INSURANCE
MANUFACTURERS AND CONTRACTORS LIABILITY INSURANCE
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY INSURANCE
OWNERS, LANDLORDS AND TENANTS LIABILITY INSURANCE
SMP LIABILITY INSURANCE
STOREKEEPERS INSURANCE**

It is agreed that the exclusion relating to the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants is replaced by the following:

(1) to bodily injury or property damage arising out of the actual, alleged or threatened discharge, dispersal, release or escape of pollutants:

(a) at or from premises owned, rented or occupied by the named insured;

(b) at or from any site or location used by or for the named insured or others for the handling, storage, disposal, processing or treatment of waste;

(c) which are at any time transported, handled, stored, treated; disposed of, or processed as waste by or for the named insured or any person or organization for whom the named insured may be legally responsible; or

(d) at or from any site or location on which the named insured or any contractors or subcontractors working directly or indirectly on behalf of the named insured are performing operations:

(i) if the pollutants are brought on or to the site or location in connection with such operations; or

(ii) if the operations are to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize the pollutants.

(2) to any loss, cost or expense arising out of any governmental direction or request that the named insured test for, monitor, clean up, remove, contain, treat, detoxify or neutralize pollutants.

Pollutants means any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals and waste. Waste includes materials to be recycled, reconditioned or reclaimed.

Signature of Insured

This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY

William H. Delmonico
PRESIDENT

11 XCL

STOCK NO. GL 21 33 02 85

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KATTEN MUCHIN & ZAVIS

525 WEST MONROE STREET • SUITE 1600

CHICAGO, ILLINOIS 60606-3693

TELEPHONE (312) 902-5200

TELECOPIER (312) 902-1061

TELEX 298264 AT LAW UR

STUART N. GREENBERGER
(1932 - 1986)

180 WEST PARK AVENUE
ELMHURST, ILLINOIS 60126-3307
TELEPHONE (312) 530-7070

223 EAST MONROE STREET
SPRINGFIELD, ILLINOIS 62701-1126
TELEPHONE (217) 753-4490

WRITER'S DIRECT DIAL NUMBER

902-5332

May 14, 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Susan Swales
CERCLA Enforcement Section (5HE-12)
U.S. Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604

Re: Hannah Marine Corporation
Lemont, Illinois

Dear Ms. Swales:

On May 4, 1987 Hannah Marine Corporation ("Hannah") received the U.S. Environmental Protection Agency's ("EPA") letter dated April 30, 1987. That letter was a sequel to EPA's information request of January 26, 1987, and contained a second request for information.

As Hannah stated in its response of April 3, 1987, the relevant time period of EPA's response extends over a period of about thirty-six years, and not all of the information is available. Previously, Hannah made good faith efforts to respond to EPA's request and produced several thousand pages of documents. Included herewith are additional documents, located after the April 3, 1987 response was submitted, which may be responsive to Request No. 5. They are comprised of copies of the permits listed in Response No. 9, to the extent that they had not previously been submitted.

Upon receipt of EPA's April 30, 1987 letter, Hannah conducted yet another search and found no additional responsive documents. Hannah has also conducted additional interviews with present and former employees and has made additional inquiries in response to

RECEIVED

MAY 18 1987

U.S. EPA, REGION V
WASTE MANAGEMENT DIVISION
HAZARDOUS WASTE ENFORCEMENT GROUP

KATTEN MUCHIN & ZAVIS

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May 14, 1987
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EPA's April 30 letter. During these interviews and inquiries certain notes were generated by me, or at my direction. Those notes are protected by the attorney-client privilege and the attorney work-product doctrine, both of which are hereby asserted. Without waiving the aforementioned privilege or doctrine, additional information that may be relevant to EPA's most recent requests is included below.

EPA requested information about "disposal of wastes into the canal," although the original letter contained no such specific request. Two pathways by which liquid wastes have been disposed into the Chicago Sanitary Ship Canal were clearly indicated on the diagrams provided in response to Request No. 10.

One is the discharge from Hannah's sewage treatment plant. About 600 gallons per day are discharged. This effluent is sampled and analyzed weekly by the Chicago Metropolitan Sanitary District. It is comprised solely of non-process domestic waste water from the plant. An on-site well whose age is unknown supplies water for use in the commodes. Water for all other domestic purposes is trucked to the site.

The other pathway is the "boiler blowdown." This pathway was permanently sealed in 1987 and is no longer in use. When it was in use, it transferred water by means of a 4-inch pipe from the boiler (used to heat water for cleaning barges) to the Chicago Sanitary Ship Canal. Water was supplied to the boiler from the Canal, and was supplemented by the above-referenced well. A water softening agent was added to prevent scaling, and when in use, the boiler was "blown down" an average of once every twelve hours or so. During each of these occasions, approximately 100 gallons were discharged to the Canal.

Additional investigation also revealed that in mid-1981 and on previous occasions, rainwater was pumped from the diked areas around the "vac tanks" and storage tanks (shown on the more comprehensive of the two diagrams previously submitted) to the Canal. It is believed that this was done a total of approximately six times.

EPA also requested additional information regarding the quantities and types of wastes disposed in the evaporation ponds (see Response No. 10), as well as the location which Browning

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Ferris Industries used for the disposal of the wastes taken from the ponds when they were removed. Hannah has had only limited success in finding the relevant information.

First, please note that the documents that Hannah previously submitted to EPA indicate that the evaporation ponds were removed in December 1979, almost a year before the effective date of the Resource Conservation and Recovery Act Subtitle C regulations. Therefore, Hannah has no RCRA manifest showing their destination. However, Hannah has learned from Browning Ferris that the material removed from the ponds was taken to the Winthrop Harbor - BFI No. 1 facility in Waukegan, Illinois.

At all times during their use, the ponds were only used for the disposal of wash water from the on-site waste tank, assuming the waste tank predated the ponds, which is not known. The waste tank contained wash water resulting from the barge cleaning process. For the most part, until about 1976 Hannah cleaned barges containing only asphalt and petroleum products. After that time it cleaned barges containing other types of products.

In the course of its recent interviews, Hannah has learned that the ponds were not continuously used since the inception of Hannah's operations at the Lemont facility. It is not known when the ponds were first constructed (if they were constructed at all) or when they were first used.

At various times Hannah apparently disposed of the contents of the waste tank by several means. As far as can be determined, it appears that Hannah had the wastewater transported by barge to the ECI Refinery in East Chicago, Indiana (around 1975). Later, the wastewater was trucked off-site by Waste Management, Inc. (around 1978). Finally, the ponds were used. The exact time periods of these activities is not known.

Finally, Hannah has been informed that it had on its site two pits into which waste petroleum products were placed. It is believed that these pits were located in the area where the tank farm is currently located and that they were removed approximately twenty years ago. Nothing more is known about these pits, assuming they actually existed.

KATTEN MUCHIN & ZAVIS

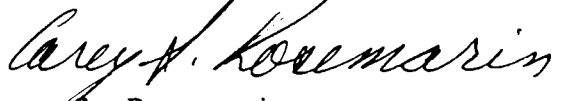
Ms. Susan Swales
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Page 4

Hannah has again made all reasonable efforts to answer each request as fully as possible. The information conveyed herein is an accurate reflection of the results of Hannah's additional investigation. It is true to Hannah's best knowledge and belief, but has not been independently verified.

Nothing stated herein is intended to be an admission that U.S. EPA is lawfully entitled to the information it has requested, or that any particular action by Hannah subjects it to any statutory, regulatory, or other requirement, and shall not be so understood. Hannah waives no rights in responding to EPA's information requests.

Should you have any questions about this response, kindly contact me at the above number. Thank you for your cooperation.

Very truly yours,


Carey S. Rosemarin

CSR/djn
Enclosures



217/782-6762

DECEMBER 05, 1985

APPLICATION RECEIVED: 11/18/85

PERMIT NUMBER: 996032-0316000051

PERMIT ISSUED TO:

WASTE STREAM NUMBER: 996032

PERMIT EXPIRES: 12/22/89

CHEM-CLEAR INC
11600 S STONY ISLAND AVE
CHICAGO, IL 60617

CHEM-CLEAR INC
11600 S STONY ISLAND AVE
CHICAGO, IL 60617

WASTE NAME: CAUSTIC WASH WATER

WASTE CLASSIFICATION: NON-HAZARDOUS NOT SUBJECT TO REG

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

DISPOSAL SITE: CHEM-CLEAR INC

TEMA LTR NO.: 0316000051

DISPOSITION OF WASTE:

WASTE TREATMENT

ATTENTION: WASTE DATA

WASTE GENERATION: HANNAH MARINE CORP

351 FRODOUSE RD-SUITE 101

CHICAGO, IL 60621

TEMA GENERATION NO.: 0436020004

HANNAH MARINE CORP-SHIPYARD

WINGERT RD AT ARCHER AVE

LEMONI, IL 60439

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS AND
ANY SPECIAL CONDITIONS LISTED BELOW.

RECEIVED
HANNAH MARINE CORP
SECTION: MAYPOUR

Lawrence W. Easton
LAWRENCE W. EASTON, P.E.
MANAGER, PERMIT SECTION
DIVISION OF LAND POLLUTION CONTROL



217/782-6762

DECEMBER 05, 1984

APPLICATION RECEIVED: 11/01/84

PERMIT NUMBER: 996032-0316000051

PERMIT ISSUED TO:

CHEM-CLEAR INC
11800 S STONY ISLAND AVE
CHICAGO, IL

60617

CHEM-CLEAR INC - SUITE 415
992 OLD EAGLE SCHOOL ROAD
WAYNE, PA
19087

WASTE NAME: CAUSTIC WASH WATER

WASTE CLASSIFICATION: NON-HAZARDOUS NOT SUBJECT TO FCL

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS.

DISPOSAL SITE: CHEM-CLEAR INC

TEPA SITE NO.: 0316000051

DISPOSITION OF WASTE:

WASTE TREATMENT:

ATTENTION: MRS JATH

WASTE GENERATOR: HANNAH MARINE CORP

361 FRONTAGE RD-SUITE 101
BURR RIDGE, IL

60521

TEPA GENERATOR NO.: 0438020804

HANNAH MARINE CORP-SHIPYARD

KINGERY RD AT ARCHER AVE
LEMONI, IL

60439

LRE:MKL

CC:HANNAH MARINE CORP
REGION: N

LAWRENCE W. EASTEP, P.E.

MANAGER, PERMIT SECTION
DIVISION OF LAND POLLUTION CONTROL



GENERIC WASTE STREAM PERMIT ATTACHMENT

SITE CODE: 0316000051

GENERIC W/S PERMIT NUMBER: 000052

SITE NAME: CHEM-CLEAR INC

SUP/OP. PERMIT NUMBER: 1983178SP

DATE RECEIVED: 10/31/83

DATE APPROVED: 12/12/83

GENERIC WASTE CODE: 0030

GENERIC WASTE NAME: WASTE FROM THE CLEANING OF TANKS AND EQUIPMENT

WASTE CLASSIFICATION: HAZARDOUS SUBJECT TO FEE

USEPA HAZARDOUS WASTE NUMBER(S): D002, D005, D006, D007, D008

TREATMENT CODE(S): T23, T24, T25, T31, T40, T41, T44

FLASH POINT (MIN): N/A F

PH (MIN): N/A

PH (MAX): N/A

----- MAJOR WASTE COMPONENTS -----

CODE	NAME	MAX LIMITS
0024	ARSENIC	001 PPT
0036	BARIUM	001 % WT
0025	CADMIUM	300 PPM
0031	CHROMIUM	015 PPM
0030	LEAD	005 % WT
0027	MERCURY	001 PPM
0029	SELENIUM	001 % WT
0034	SILVER	001 % WT
0037	SODIUM HYDROXIDE	015 % VOL
0038	CALCIUM HYDROXIDE	015 % VOL
0039	HYDROCHLORIC ACID	015 % VOL
0040	SULFURIC ACID	015 % VOL
0046	FERRIC CHLORIDE	015 % VOL
0001	WATER	099 % VOL

DISPOSAL METHOD: WASTE TREATMENT

IKL



2200 Churchill Road, Springfield, Illinois 62706

217/782-5161

JUNE 26, 1982

APPLICATION RECEIVED 06/21/82

PERMIT NUMBER 921838-03160041

PERMIT ISSUED TO: LIQUID DYNAMICS

655 E 114TH ST

CHICAGO

IL

60628

DAVID W CREECH

939 HOWEY LANE

CRETE

IL

60417

WASTE NAME: CONTAMINATED DILUTED LAUSTIC

WASTE CLASSIFICATION: NON-HAZARDOUS NOT SUBJECT TO FEE

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS.

DISPOSAL SITE: CHGO/LIQUID DYNAMICS

ILPA SITE NO.: 03160041

ANNUAL VOLUME AUTHORIZED:

1,000,000 GALLONS

DISPOSITION OF WASTE:

WASTE TREATMENT

ATTENTION: OENO FARE

WASTE GENERATOR: HANNAH INLAND WATER

107 STREET N STE B3

LENDEN

IL

60639

ILPA GENERATOR NO.: 03116200116

TEC:SAS

THOMAS E. CAVANAGH, JR.

CC/HANNAH INLAND WATER

REGIONS: N

MANAGER, PERMIT SECTION

DIVISION OF LAND POLLUTION CONTROL



Environmental Protection Agency

2200 Churchill Road, Springfield, Illinois 62706

217/782-6760

APRIL 09, 1982

APPLICATION RECEIVED: 03/26/82

PERMIT NUMBER: 921156-03160056

PERMIT ISSUED TO: CID CORPORATION

P. O. BOX 1306

CALUMET CITY, IL 60409

WASTE STREAM NUMBER: 921156

PERMIT EXPIRES: 04/06/85

WASTE MGMT OF IL

P. O. BOX 1296

CALUMET CITY, IL 60409

WASTE NAME: CONTAMINATED DILUTE CAUSTIC WA

WASTE CLASSIFICATION: HAZARDOUS NOT SUBJECT TO FFE

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS.

DISPOSAL SITE: CHICAGO/CID PROCESS

TEPA SITE NO.: 03160056

ANNUAL VOLUME AUTHORIZED: 1,000,000 GALLONS

DISPOSITION OF WASTE:

WASTE TREATMENT

ATTENTION: DINO FARBE

TEPA GENERATOR NO.: 0311620016

WASTE GENERATOR: HANNAH INLAND WATER

107 STREET & RTE 83

LEMONY, IL 60439

KKCKEM

CC: HANNAH INLAND WATER

REGION: N

Rama K. Chaturvedi

RAMA K. CHATURVEDI, P.E.

MANAGER SPECIAL WASTE UNIT

RESIDUAL MANAGEMENT SECTION

DIVISION OF LAND/NOISE POLLUTION CONTROL



Environmental Protection Agency
2200 Churchill Road, Springfield, Illinois 62706

EXPIRED

217/782-6760

MARCH 31, 1982
APPLICATION RECEIVED 03/04/82
PERMIT NUMBER 820507-03160030
PERMIT ISSUED TO CID CORPORATION
P.O. BOX 1306
CALUMET CITY, IL 60409

WASTE STREAM NUMBER 820507
PERMIT EXPIRES 03/29/83
WASTE NAME OF IL
P.O. BOX 1296
CALUMET CITY, IL 60409

WASTE NAME: CAUSTIC WASTE WATER (4440H)
WASTE CLASSIFICATION: HAZARDOUS SUBJECT TO FEE

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS.

DISPOSAL SITE: CHICAGO/CID #2

IEPA SITE NO.: 03160030

ANNUAL VOLUME AUTHORIZED: 1,000,000 GALLONS
DISPOSITION OF WASTE:

BULK WASTE (SOLID, LIQUID, POWDER, OR SLUDGE) MIXED WITH DAILY RECEIPT
OF REFUSE ABOVE GRADE (CODISPOSAL)

ATTENTION: MAYANK HUNS JAIN
WASTE GENERATOR: MANNAH INLAND WATERW
107 STREET & RTE 83
LEMONT, IL 60439

IEPA GENERATOR NO.: 0311620011G

SPECIAL CONDITIONS:

WHILE THE DISPOSAL OF BULK LIQUIDS IS NOT IN VIOLATION OF THE IEPA
REGULATIONS AT THIS TIME, PLEASE NOTE THAT THE ACCEPTANCE OF BULK LIQUIDS
AT THIS SITE MAY CONSTITUTE A DIRECT VIOLATION OF 40CFR SECTION 365.318(A).

Rama K. Chaturvedi

RKC:DAH

RAMA K. CHATURVEDI, P.E.
MANAGER SPECIAL WASTE UNIT
RESIDUAL MANAGEMENT SECTION
DIVISION OF LAND/NOISE POLLUTION CONTROL

CC: MANNAH INLAND WATERW
REGION: W

Protection Agency

2200 Churchill Road, Springfield, Illinois 62706

217/782-6760

DECEMBER 24, 1981

APPLICATION RECEIVED: 12/15/81

PERMIT NUMBER: 996032-03160051

PERMIT ISSUED TO: CHEM-CLEAR

11800 S STONEY I
CHICAGO

, IL

60617

WASTE STREAM NUMBER: 996032

PERMIT EXPIRES: 12/22/84

CHEM CLEAR INC

997 EAGLE SCH RD

WAYNE

, PA

19097

WASTE NAME: CAUSTIC WASH WATER

WASTE CLASSIFICATION: "NON-HAZARDOUS NOT SUBJECT TO FEE"

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS.

DISPOSAL SITE: CHICAGO/CHEM CLEAR

IEPA SITE NO.: 03160051

ANNUAL VOLUME AUTHORIZED:

1,200,000 GALLONS

DISPOSITION OF WASTE:

WASTE TREATMENT

ATTENTION: NUNS JAIN

IEPA GENERATOR NO.: 03116200116

WASTE GENERATOR: HANNAH INLAND WATERW

107 STREET & RTE 83

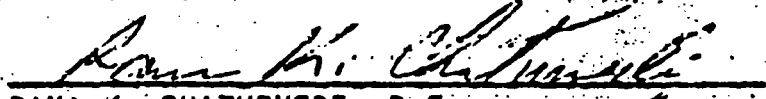
LEMONT

, IL

60439

RKC:KCM

CC: HANNAH INLAND WATERW
REGION: N


RAMA K. CHATURVEDI, P.E.
MANAGER SPECIAL WASTE UNIT
RESIDUAL MANAGEMENT SECTION
DIVISION OF LAND/NOISE POLLUTION CONTROL



Environmental Protection Agency
2200 Churchill Road, Springfield, Illinois 62706

217/782-6760

DECEMBER 15, 1981

APPLICATION RECEIVED 11/23/81

WASTE STREAM AUTHORIZATION NUMBER: 995677

WASTE STREAM AUTHORIZATION EXPIRES: 12/10/81

RONALD DELOACH
RILEY ROAD
EAST CHICAGO, IN 46312

WASTE NAME: WASTE HYDROCARBONS

WASTE CLASSIFICATION: HAZARDOUS NOT SUBJECT TO FEE

DISPOSAL SITE: IN/AMERICAN RECOVERY

IEPA SITE NO.: 91804906

ANNUAL VOLUME AUTHORIZED:

150,000 GALLONS

DISPOSITION OF WASTE:

FACILITIES ENGAGED IN RECOVERY OF SOLVENTS, OILS, ACIDS, ETC.,
TREATMENT OR PROCESS

ATTENTION: NUNS JAIN

WASTE GENERATOR: HANNAH INLAND WATER
107 STREET & RTE 83
LEMONT, IL 60439

IEPA GENERATOR NO.: 03116200116

THIS IS A WASTE STREAM AUTHORIZATION ISSUED PURSUANT TO THE ILLINOIS POLLUTION CONTROL BOARD'S CHAPTER 9 SPECIAL WASTE HAULING REGULATIONS* WHICH REQUIRES TRACKING OF ALL SPECIAL WASTES ORIGINATING IN AND SEEKING TREATMENT, STORAGE OR DISPOSAL OUTSIDE OF ILLINOIS. IN ORDER TO TRANSACT BUSINESS LAWFULLY IN ILLINOIS, ALL ILLINOIS GENERATORS AND/OR LICENSED WASTE HAULERS OF SPECIAL WASTE, THAT CAUSE OR ALLOW SPECIAL WASTE TO BE TRANSPORTED OUT OF STATE FOR TREATMENT, STORAGE OR DISPOSAL, MUST INSURE COMPLIANCE WITH THE ABOVE MENTIONED SPECIAL WASTE HAULING REGULATIONS INCLUDING BUT NOT LIMITED TO RULE 301, AND 501 OF SAID SPECIAL WASTE HAULING REGULATIONS.

Rama K. Chaturvedi
RAMA K. CHATURVEDI, P.E.
MANAGER SPECIAL WASTE UNIT
RESIDUAL MANAGEMENT SECTION
DIVISION OF LAND/NOISE POLLUTION CONTROL

RKC:DMF

CC: HANNAH INLAND WATER
REGION:

*COPIES OF THESE REGULATIONS ARE AVAILABLE THROUGH ILLINOIS POLLUTION CONTROL BOARD, 309 WEST WASHINGTON, CHICAGO, ILLINOIS 60606

217/782-6762

JULY 24, 1986

APPLICATION RECEIVED: 06/05/86

PERMIT NUMBER 950608-0310030002

PERMIT ISSUED TO:

WASTE STREAM NUMBER 960608

PERMIT EXPIRES: 07/22/91

CENTURY OIL INC
13005 HAMLIN COURT
ALSTP

CENTURY OIL INC
13005 HAMLIN COURT
ALSTP

IL
06050

IL
06050

WASTE NAME: WASTE PRODUCT

WASTE CLASSIFICATION: HAZARDOUS NOT SUBJECT TO FEE

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

DISPOSAL SITE: CENTURY OIL INC

DISPOSAL SITE NO.: 0310030002

DISPOSITION OF WASTE:

WASTE TREATMENT

ATTENTION: JOSEPH C. HANCOCK

WASTE GENERATOR: HANNAH MARINE CORP

301 FRITZGE RD-SUITE 101
BARK RIDGE

IL
60431

TEL. GENERATOR NO.: 0415020004

HANNAH MARINE CORP-SUIPERSONIC

FISHERY RD AT ARCHER AVE
LEMONI

IL
60439

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS AND
ANY SPECIAL CONDITIONS LISTED BELOW.

ENCLOSURE

CC: HANNAH MARINE CORP
REGION: WYANDOT

Lawrence W. Foster
LAWRENCE W. FOSTER, P.E.
ARCHER, PERMIT SECTION
DIVISION OF LAND POLLUTION CONTROL